## Attachment 7 Economic Analysis –Water Supply Cost Benefits

#### City of Firebaugh Well Replacement Project

This project is the only option available to the City in providing needed water. Furthermore, this project is the best economical option the City has. The costs and benefits of this project are discussed in the narrative below and listed in detail in Table 11 and Table 12 provided.

This project has a clear goal and benefit: providing the City's needed water supply. Without this project the City will not be able to supply water demand.

- The Well is unable to meet the water demand or expected production rate because of the high levels of arsenic and contaminants found in the water.
   Therefore, it is expected that within the 2010 calendar year the Well will be shut off leaving the City without the ability to provide water to the community.
- The replacement of the Well will alleviate the strain on meeting the community's water demand. The replacement well will provide the City with contaminate-free water and provide the needed production level to meet demand.
- Assessing with- and without-project conditions is straightforward. The City does
  not have reserve wells, funding for this type of infrastructure project, or
  neighboring communities with the capacity to purchase water from. The City's
  rural environment limits the options. With the project the City will be able to meet
  water demand and provide a safe supply. However, without the project the City
  will be left without the ability to meet water demand. In assessing the project,
  water consultants and City Staff considered the project against other options.
  Based on their expertise and knowledge, they made the best possible analysis of
  with- and without-project conditions.
- Benefits of the project will directly impact the local community. The project will
  provide water supply to households and business while keeping utility rates low.
- Beneficiaries will be local residents and businesses of Firebaugh.
- Benefits of the project will be received by the residents or businesses immediately. Once construction on the well is complete, water pumped from this well will immediately be integrated into the City's water distribution system.
- There is limited uncertainty regarding the benefits identified here. Although the benefit of the Average Gallons per Minute listed in Table 12 may vary. It is difficult to predict what natural sediment or compounds will appear in the future groundwater pumped through the well. Precautions will be taken prior to well drilling to ensure the location does not contain harmful levels of contaminant. However, as sediment moves and groundwater shifts, changes to contaminant levels are possible.
- There are no adverse effects present in this project.

The information and data presented in the attached tables were collected from the City of Firebaugh's Public Works and Finance Departments. These numbers were cross-referenced with past time spent administering and maintaining wells, rate of pay for public works department's employees, and the anticipated water supply quantities. Specifically, the water supply benefits in Table 12 were listed based off of average well production of wells similar in size to Well #7 that are currently in use in the City.

# Table 11- Annual Cost of Project (All costs should be in 2009 Dollars)

**Project: City of Firebaugh Well #7 Replacement** 

	Initial Costs		Operation	ons and Ma	intenance	Costs <sup>(1)</sup>			unting lations
	(a)	(b)	(c)	(d)	(e)	(f)	(a)	(h)	(i)
YEAR	Grand Total Cost From Table 7 (row (i), column(d))	Admin	Operation	Maintenan ce	Replaceme nt	Other	(g) Total Costs (a) ++ (f)	Discount Factor	Discount d Costs(g x (h)
2010	\$665,000	\$500	-\$1,560	-\$500	\$0	\$0	\$663,440	0.943	\$625,624
2011	\$665,000	\$500	-\$1,560	-\$500	\$0	\$0	\$663,440	0.890	\$590,462
2012	\$665,000	\$500	-\$1,560	-\$500	\$0	\$0	\$663,440	0.840	\$557,290
2013	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.792	\$525,048
2014	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.747	\$495,210
2015	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.705	\$467,373
2016	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.665	\$440,855
2017	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.627	\$415,663
2018	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.592	\$392,460
2019	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.558	\$369,921
2020	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.527	\$349,369
2021	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.497	\$329,48
2022	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.469	\$310,919
2023	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.442	\$293,019
2024	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.417	\$276,44
2025	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.394	\$261,19
2026	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.371	\$245,95
2027	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.350	\$232,029
2028	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.331	\$219,433
2029	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.312	\$206,83
2030	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.294	\$194,90
2031	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.278	\$184,29
2032	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.262	\$173,690
2033	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.247	\$163,740
2034	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.233	\$154,463
2035	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.22	\$145,84
2036	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.207	\$137,229
2037	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.196	\$129,93
2038	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.185	\$122,644
2039	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.174	\$115,352
2040	\$665,000	\$0	-\$1,560	-\$500	\$0	\$0	\$662,940	0.164	\$108,722
Project Life				Total Procen	t Value of Die	scounted C	osts (Sum of		\$9,235,42
		Transfer to					and Benefits	` ' '	ψ3,233,42
omments:									

## Table 12 - Annual Water Supply Benefits (All benefits should be in 2009 dollars)

Project: \_City of Firebaugh Well #7 Replacement

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Type of Benefit	Measure of	Without	With Project	Change	Unit \$	Annual \$ Value	Discount	Discounted
		Benefit	Project		Resulting from	Value		Factor	Benefits
		(Units)			Project (e) – (d)		(f) x (g)		(h) x (i)
		Average			(5) (2)	(1)	(1)	(1)	(1)
		Gallons per							
		Minute							
2010	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2010	Water Supply Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2011	Water Supply  Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2012	Water Supply  Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2013	Water Supply Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2014	Water Supply Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2015	Water Supply  Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2017	Water Supply Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2017	Water Supply Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2019	Water Supply  Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2020	Water Supply Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2021	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2022	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2023	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2024	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2025	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2026	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2027	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2028	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2029	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2030	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2031	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2032	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2033	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2034	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2035	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2036	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2037	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2038	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2039	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A
2040	Water Supply	(GPM)	0	1050	1050	N/A	N/A	N/A	N/A

Total Present Value of Discounted Benefits Based on Unit Value (Sum of the values in Column (j) for all Benefits shown in table)

N/A

Comments:

<sup>(1)</sup> Complete these columns if dollar value is being claimed for the benefit.

#### City Of San Joaquin Water Meter Installation

The installation of 640 water meters on existing residential services in San Joaquin is expected to reduce per capita water consumption on the metered services by 20%. This reduction estimate is provided by the USEPA in Appendix B of their Water Conservation Plan Guidelines. The expected life span, as described in those guidelines ranges from 8 to 20 years. For the purposes of this project proposal, we will use 15 years for the project life. By helping to reduce the residential water use (with Phase I of the project), and ultimately citywide use (with future Phases for Commercial and Industrial meter installations), the City hopes to cut the total demand on their groundwater supply by 20%. Over the 15-year lifespan of the Phase I project, it is expected that the total benefits of the project will outweigh the costs.

The total cost of the project is presented below in Table 11 – "Annual Cost of Project". The initial cost is based on the detail provided in Attachment 4 - "Budget", with the costs associated with the Admin, Design and Environmental Documentation tasks scheduled to be expended in 2010. The costs associated with Construction, Construction Management, Legal services and Contingency are expected to be used in 2011.

The incremental changes to Operations and Maintenance costs are expected to be fairly minor. It is assumed that the Admin costs will be increased due to additional clerical work in data entry for service billing each month instead of the previous flat rate billing method. Operations and Replacement costs are assumed to be nil since the meters will be automatically read and their design life will span the length of the project life. Maintenance costs are assumed to be reduced to trouble-shooting by Public Works staff throughout the year. Unknown "contingency" costs are estimated as 5% of the total combined Admin and Maintenance costs. The Total Present Value of Discounted Costs for the project is estimated to be \$1,041,523.

# Table 11 - Annual Cost of Project (All costs should be in 2009 dollars) Project: <u>City of San Joaquin</u>

	Initial Costs		Operat	ions and M	aintenanc	e Costs		Discounti	ng Calculations
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
	Grand Total Cost from Table 7 (row (i), column			Maint-	Replace-			Discount	Discounted Benefits (h) x
Year	(d)) <sup>(1)</sup>	Admin <sup>(2)</sup>	Operation	enance <sup>(3)</sup>	ment	Other <sup>(4)</sup>	Total Costs	Factor	(i)
2009							\$0	1.000	\$0
2010							\$0	0.943	\$0
2011	\$ 69,000	\$ 4,300	\$ -	\$12,500	\$ -	\$840	\$86,640	0.890	\$77,110
2012	\$ 923,600	\$ 4,429	\$ -	\$12,875	\$ -	\$865	\$941,769	0.840	\$791,086
2013		\$ 4,562	\$ -	\$13,261	\$ -	\$891	\$18,714	0.792	\$14,822
2014		\$ 4,699	\$ -	\$13,659	\$ -	\$918	\$19,276	0.747	\$14,399
2015		\$ 4,840	\$ -	\$14,069	\$ -	\$945	\$19,854	0.705	\$13,997
2016		\$ 4,985	\$ -	\$14,491	\$ -	\$974	\$20,450	0.665	\$13,599
2017		\$ 5,134	\$ -	\$14,926	\$ -	\$1,003	\$21,063	0.627	\$13,207
2018		\$ 5,288	\$ -	\$15,373	\$ -	\$1,033	\$21,695	0.592	\$12,843
2019		\$ 5,447	\$ -	\$15,835	\$ -	\$1,064	\$22,346	0.558	\$12,469
2020		\$ 5,611	\$ -	\$16,310	\$ -	\$1,096	\$23,016	0.527	\$12,130
2021		\$ 5,779	\$ -	\$16,799	\$ -	\$1,129	\$23,707	0.497	\$11,782
2022		\$ 5,952	\$ -	\$17,303	\$ -	\$1,163	\$24,418	0.469	\$11,452
2023		\$ 6,131	\$ -	\$17,822	\$ -	\$1,198	\$25,150	0.442	\$11,116
2024		\$ 6,315	\$ -	\$18,357	\$ -	\$1,234	\$25,905	0.417	\$10,802
2025		\$ 6,504	\$ -	\$18,907	\$ -	\$1,271	\$26,682	0.394	\$10,513
2026		\$ 6,699	\$ -	\$19,475	\$ -	\$1,309	\$27,483	0.371	\$10,196
				To	tal Prese	nt value	of Discoun	ted Costs	\$1,041,523

Assumed that Project Tasks (a) through (c) will be completed in 2011, and Tasks (d) through (h) in 2012.

Salary escalated at 3%/year over project life.

(4) Assumed to be miscellaneous costs totalling 5% of combined Admin and Maintenance costs annually.

Assumed 8 hours per month for clerical data entry for service billing = 96 hours/year @ \$45/hr.

Salary escalated at 3%/year over project life.

<sup>(3)</sup> Assumed 4 hours per week for maintenance = 208 hours/year @ \$60/hr.

The expected water supply benefit, as stated before, is the reduction of water use by metered users. With available grant funding, the City can only afford to install meters on 640 of the City's existing 905 residential service connections. Of the existing 48 commercial and industrial service connections, only 9 are currently metered. When additional funding becomes available, the City will seek to meter the remaining residential, commercial and industrial service connections. The current and projected water supply and demand is shown below.

#### CITY OF SAN JOAQUIN CURRENT AND PROJECTED WATER SUPPLY AND DEMAND

CITY OF SAN JOAQUIN WATER USAGE											
				AVG.	AVG.	MAX	MAX DAY	PEAK	MAX DAY		
YEAR	POPULATION		DEMAND	DEMAND	DEMAND	DAY	+ F.F.	HOUR	+ FF		
		(mg)	% CHANGE	(gpcd)	(gpm)	(gpm)	(gpm)	(gpm)	(MG)		
1994	2,720										
1995	2,830	189.5		183	361	541	2,541	901	0.759		
1996	2,940	192.1	1.4%	179	365	548	2,548	914	0.766		
1997	2,970	207.5	8.0%	191	395	592	2,592	987	0.808		
1998	3,010	185.4	-10.7%	169	353	529	2,529	882	0.748		
1999	3,080	152.4	-17.8%	136	290	435	2,435	725	0.658		
2000	3,270	205.5	34.8%	172	391	586	2,586	977	0.803		
2001	3,336	222.8	8.4%	183	424	636	2,636	1,060	0.850		
2002	3,408	212.3	-4.7%	171	404	606	2,606	1,010	0.822		
2003	3,514	226.0	6.5%	176	430	645	2,645	1,075	0.859		
2004	3,579	240.7	6.5%	184	458	687	2,687	1,145	0.899		
2005	3,614	221.6	-7.9%	168	422	632	2,632	1,054	0.847		
2006	3,738	220.7	-0.4%	162	420	630	2,630	1,050	0.845		
2007	3,844	261.8	18.6%	187	498	747	2,747	1,245	0.957		
2008	4,055	258.7	-1.2%	175	492	738	2,738	1,230	0.949		
2009	4,060	257.2	-0.6%	174	489	734	2,734	1,224	0.945		
2010	4,166	262.9	2.2%	173	500	750	2,750	1,251	0.960		
2011	4,274	269.8	2.6%	173	513	770	2,770	1,283	0.979		
2012	4,385	276.8	2.6%	173	527	790	2,790	1,317	0.998		
2013	4,499	284.0	2.6%	173	540	810	2,810	1,351	1.018		
2014	4,616	291.4	2.6%	173	554	832	2,832	1,386	1.038		
2015	4,736	299.0	2.6%	173	569	853	2,853	1,422	1.059		
2016	4,859	306.7	2.6%	173	584	875	2,875	1,459	1.080		
2017	4,985	314.7	2.6%	173	599	898	2,898	1,497	1.102		
2018	5,115	322.9	2.6%	173	614	921	2,921	1,536	1.125		
2019	5,248	331.3	2.6%	173	630	945	2,945	1,576	1.148		
2020	5,385	339.9	2.6%	173	647	970	2,970	1,617	1.171		
2021	5,525	348.7	2.6%	173	663	995	2,995	1,659	1.195		
2022	5,668	357.8	2.6%	173	681	1,021	3,021	1,702	1.220		
2023	5,816	367.1	2.6%	173	698	1,048	3,048	1,746	1.246		
2024	5,967	376.6	2.6%	173	717	1,075	3,075	1,791	1.272		
2025	6,122	386.4	2.6%	173	735	1,103	3,103	1,838	1.299		
2026	6,281	396.5	2.6%	173	754	1,132	3,132	1,886	1.326		
2027	6,444	406.8	2.6%	173	774	1,161	3,161	1,935	1.354		

Of the total annual demand in million gallons per year (mg), 95% is attributed to residential demand, based on the metered use of the existing commercial accounts and extrapolating this usage across the entire commercial sector. For 2009, this would mean that of the 257.2 million gallons produced by the existing groundwater wells, 244.34 mg was consumed by residential customers. The total residential demand can be calculated by dividing that usage by the existing residential accounts, resulting in a total demand by each residential service of 271,000 gallons per year. Since the project proposes to install meters on 640 residential services, the total consumption (in 2009 totals) being targeted for reduction is estimated at approximately 173.44 million gallons per year. A 20% reduction of this consumption would save approximately 34.7 million gallons per year.

While the City is able to meet its peak demands with the current wells in service, a savings of nearly 35 million gallons of water per year (with Phase I) is an extremely important benefit. Over a 15-year project life, the total savings would be approximately 520 million gallons, or approximately 2 full years of citywide demand based on current consumption rates. Additionally, the reduction in cost to produce and supply the water to residents would be a significant savings. See Table 12 – "Annual Water Supply Benefits" for the estimated Total Present Value of Discounted Benefits based on Unit Value.

The Unit \$ Value is based on the total production and supply costs for the entire water utility in 2009 dollars, including salaries, benefits, operations, maintenance, utility costs, etc. Costs are escalated over the project life at the following rates:

- 1. Salaries are escalated at 5% per year
- 2. Benefits are escalated at 10% per year
- 3. Utility costs are escalated at 10% per year
- 4. All other costs are escalated at 3% per year

The estimated Total Present Value of Discounted Benefits is \$786,019.

	Table 12 - Annual Water Supply Benefits										
					should be in						
		City	•		Water Meter						
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)		
(4)	(2)	(0)	(3)	(0)	(.)	(9)	(,	(1)	U)		
					Change						
		Measure			Resulting				Discounted		
	Type of	of Benefit	Without	With	from Project	Unit \$	Annual \$	Discount	Benefits (h)		
Year	Benefit	(Units)	Project	Project	(e) - (d)	Value	value (f) x (g)	Factor	x (i)		
		Annual									
		water									
	Use	demand									
2009	Reduction	(mg/yr)	173.44	138.75	34.69	\$1,430	\$49,604	1.000	\$49,604		
2010	""	""	173.44	138.75	34.69	\$1,663	\$57,671	0.943	\$54,384		
2011	""	11 11	173.44	138.75	34.69	\$1,659	\$57,558	0.890	\$51,226		
2012	""	1111	173.44	138.75	34.69	\$1,717	\$59,570	0.840	\$50,039		
2013	""	1111	173.44	138.75	34.69	\$1,780	\$61,743	0.792	\$48,900		
2014	""	""	173.44	138.75	34.69	\$1,848	\$64,092	0.747	\$47,876		
2015	""	""	173.44	138.75	34.69	\$1,899	\$65,876	0.705	\$46,443		
2016	""	""	173.44	138.75	34.69	\$1,954	\$67,781	0.665	\$45,075		
2017	""	""	173.44	138.75	34.69	\$2,013	\$69,815	0.627	\$43,774		
2018	""	1111	173.44	138.75	34.69	\$2,075	\$71,985	0.592	\$42,615		
2019	""	11 11	173.44	138.75	34.69	\$2,142	\$74,301	0.558	\$41,460		
2020	""	""	173.44	138.75	34.69	\$2,213	\$76,772	0.527	\$40,459		
2021	""	1111	173.44	138.75	34.69	\$2,289	\$79,408	0.497	\$39,466		
2022	""	""	173.44	138.75	34.69	\$2,370	\$82,219	0.469	\$38,561		
2023	""	""	173.44	138.75	34.69	\$2,457	\$85,219	0.442	\$37,667		
2024	1111	11 11	173.44	138.75	34.69	\$2,549	\$88,418	0.417	\$36,870		
2025	""	""	173.44	138.75	34.69	\$2,647	\$91,831	0.394	\$36,181		
2026	""	11 11	173.44	138.75	34.69	\$2,752	\$95,472	0.371	\$35,420		
		Tota	l Presen	t value	of Discounted	<b>Benefits</b>	s Based on U	nit Value	\$786,019		

#### City of Tracy Water Recycling Project Phase I and Phase II

#### **Economic Analysis Assumptions**

This section helps define the assumptions used in the economic analysis for City of Tracy Recycled Water Projects Phases I and II.

Construction cost estimates. This description is planning level. The studies which will define this project more clearly are currently in progress and will be available in the spring of 2011. Construction costs estimates and assumptions used in this submittal are defined throughout the background text, scope of work for each phase and in the table item descriptions and are likely to deviate from costs that will be produced as part of the ongoing city studies. Back up tables are attached to support each number. All other numbers are assumptions tied to industry standards or prior work experience. Phase II work and write-up is dependent on Phase I and should be reviewed as such.

**O&M costs** for the recycled water system are being estimated from the City's current water system operational costs. Exhibit 13 is the Kennedy Jenks Water Rate study for the City. The analysis assumes that 30% of O&M costs are assumed to be fixed costs. Justification for the percentage was based on experience with other municipalities. Administrative costs were calculated to be about 15% of annual water system expenses.

Cross Connection program is assumed with the use of recycled water. Cost of \$300 per connection/meter per year is assumed. Multiple connections are assumed at the Holly Sugar sports park, each associated with the lease agreement for the associated field. In general a new meter was assumed for every ½ mile of road segment irrigation, one meter for each park in phase II, as well as separate meters for each parcel in Tracy Gateway as well as several meters associated with the Gateway ponds.

**Avoided Costs on water supplies for Phase I** – existing supplies serving the site will be used to meet the irrigation demands until recycled water supplies are available. The irrigation supplies are 1912 riparian rights to the San Joaquin River. This water is assumed to have annual delivery costs of approximately \$16 per acre foot.

**Avoided cost at the WWTP** on costs associated with temperature control of the plant's effluent, recycled water portion does not needed to go through the temperature control process. The temperature control process will be constructed in the next 2 years. The costs for the temperature control process were estimated based on similar processes installed by CH2MHill in other areas. Avoided costs on both capital and O&M for the system were determined.

**Phase II** has two different water sources, 1) potable water that is being used for irrigation demands that will be replaced by recycled water demands when Phase II comes on line, and 2) water that is needed to meet future growth areas demands that would need to be potable if recycled water were not available.

- 1. Existing potable services that will be exchanged for recycled water, the City's average annual per ac-ft cost for water was used.
- 2. Future development areas, new supplies are needed. The analysis assumes that existing agricultural deliveries to area would be assigned over to Tracy and used by the City. A price of \$1,500 per ac-ft of Agricultural supplies was assumed and that 3 ac-ft of agricultural water would be needed for each ac-ft of urban demand (4,500 ac-ft). A water bank operation is also needed to convert the agricultural water deliveries (8 Months) to urban use (12 months); a bank cost of \$3,500 per ac-ft was used based on discussion with Semi-Tropic Rosamond Water Authority. Lastly a treatment cost per ac-ft of \$5,360 was used (equal to \$3 per max-day water demand gallon).

Table 11- Annual Cost of Project - PHASE 1
(All costs should be in 2009 Dollars)
Project Title: CITY OF TRACY RECYCLED WATER PROJECT

	Initial Costs		Оре	erations and Ma	intenance Cos	ts <sup>(1)</sup>		Discounting	Calculations
	(0)	/h\	(0)	(4)	(0)	(f)	(a)	/h)	(i)
YEAR	(a) Grand Total Cost From Table 7 (row (i), column(d))	(b) Admin	(c) Operation	(d) Maintenance (see comments)	(e) Replacement	Other	(g) Total Costs (a) ++ (f)	(h) Discount Factor	(i) Discounted Costs(g) x (h)
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1.0000	\$0
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.9434	\$0
2011 2012	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	0.8900 0.8396	\$0 \$0
2012	\$3,266,909	\$10,715	\$74,267	\$0	\$24,934	\$0	\$3,376,824	0.8390	\$2,674,761
2014	\$0	\$11,036	\$76,495	\$0	\$25,682	\$0	\$113,213	0.7473	\$84,599
2015	\$0	\$11,367	\$78,790	\$0	\$26,452	\$0	\$116,609	0.7050	\$82,205
2016 2017	\$0 \$0	\$11,708 \$12,060	\$81,153 \$83,588	\$0 \$0	\$27,246 \$28,063	\$0 \$0	\$120,108 \$123,711	0.6651 0.6274	\$79,878 \$77,618
2017	\$0	\$12,000	\$86,096	\$0	\$28,905	\$0	\$123,711	0.5919	\$77,018
2019	\$0	\$12,794	\$88,678	\$0	\$29,772	\$0	\$131,245	0.5584	\$73,286
2020	\$0	\$13,178	\$91,339	\$0	\$30,665	\$0	\$135,182	0.5268	\$71,212
2021 2022	\$0 \$0	\$13,573 \$13,980	\$94,079	\$0 \$0	\$31,585	\$0 \$0	\$139,238	0.4970 0.4688	\$69,197
2022	\$0	\$13,960	\$96,901 \$99,808	\$0	\$32,533 \$33,509	\$0 \$0	\$143,415 \$147,717	0.4423	\$67,238 \$65,335
2024	\$0	\$14,832	\$102,803	\$0	\$34,514	\$0	\$152,149	0.4173	\$63,486
2025	\$0	\$15,277	\$105,887	\$0	\$35,550	\$0	\$156,713	0.3936	\$61,690
2026	\$0	\$15,735	\$109,063	\$0	\$36,616	\$0	\$161,415	0.3714	\$59,944
2027 2028	\$0 \$0	\$16,207 \$16,693	\$112,335 \$115,705	\$0 \$0	\$37,715 \$38,846	\$0 \$0	\$166,257 \$171,245	0.3503 0.3305	\$58,247 \$56,599
2029	\$0	\$17,194	\$119,176	\$0	\$40,011	\$0	\$176,382	0.3303	\$50,399
2030	\$0	\$17,710	\$122,752	\$0	\$41,212	\$0	\$181,673	0.2942	\$53,440
2031	\$0	\$18,241	\$126,434	\$0	\$42,448	\$0	\$187,124	0.2775	\$51,928
2032 2033	\$0 \$0	\$18,789 \$19,352	\$130,227 \$134,134	\$0 \$0	\$43,722 \$45,033	\$0 \$0	\$192,737 \$198,520	0.2618 0.2470	\$50,458 \$49,030
2034	\$0	\$19,933	\$134,154	\$0	\$46,384	\$0	\$204,475	0.2330	\$47,642
2035	\$0	\$20,531	\$142,303	\$0	\$47,776	\$0	\$210,609	0.2198	\$46,294
2036	\$0	\$21,147	\$146,572	\$0	\$49,209	\$0	\$216,928	0.2074	\$44,984
2037 2038	\$0 \$0	\$21,781	\$150,969	\$0 \$0	\$50,685	\$0 \$0	\$223,435	0.1956	\$43,711
2039	\$0	\$22,435 \$23,108	\$155,498 \$160,163	\$0	\$52,206 \$53,772	\$0 \$0	\$230,139 \$237,043	0.1846 0.1741	\$42,474 \$41,272
2040	\$0	\$23,801	\$164,968	\$0	\$55,385	\$0	\$244,154	0.1643	\$40,103
2041	\$0	\$24,515	\$169,917	\$0	\$57,047	\$0	\$251,479	0.1550	\$38,968
2042 2043	\$0 \$0	\$25,250	\$175,015	\$0 \$0	\$58,758 \$60,521	\$0 \$0	\$259,023	0.1462	\$37,866
2043	\$0	\$26,008 \$26,788	\$180,265 \$185,673	\$0	\$60,521 \$62,336	\$0 \$0	\$266,794 \$274,797	0.1379 0.1301	\$36,794 \$35,753
2045	\$0	\$27,592	\$191,243	\$0	\$64,207	\$0	\$283,041	0.1227	\$34,741
2046	\$0	\$28,419	\$196,981	\$0	\$66,133	\$0	\$291,533	0.1158	\$33,757
2047 2048	\$0 \$0	\$29,272 \$30,150	\$202,890 \$208,977	\$0 \$0	\$68,117 \$70,160	\$0 \$0	\$300,279 \$309,287	0.1092 0.1031	\$32,802 \$31,874
2049	\$0	\$31,055	\$208,977	\$0	\$70,160	\$0	\$318,566	0.1031	\$30,972
2050	\$0	\$31,986	\$221,703	\$0	\$74,433	\$0	\$328,123	0.0917	\$30,095
2051	\$0	\$32,946	\$228,354	\$0	\$76,666	\$0	\$337,966	0.0865	\$29,243
2052 2053	\$0 \$0	\$33,934 \$34,952	\$235,205 \$242,261	\$0 \$0	\$78,966 \$81,335	\$0 \$0	\$348,105 \$358,548	0.0816 0.0770	\$28,416 \$27,611
2054	\$0	\$36,001	\$242,201	\$0	\$83,775	\$0	\$369,305	0.0727	\$26,830
2055	\$0	\$37,081	\$257,015	\$0	\$86,288	\$0	\$380,384	0.0685	\$26,071
2056	\$0	\$38,193	\$264,725	\$0	\$88,877	\$0	\$391,795	0.0647	\$25,333
2057 2058	\$0 \$0	\$39,339 \$40,519	\$272,667 \$280,847	\$0 \$0	\$91,543 \$94,289	\$0 \$0	\$403,549 \$415,656	0.0610 0.0575	\$24,616 \$23,919
2059	\$0	\$41,735	\$289,273	\$0	\$97,118	\$0	\$428,125	0.0543	\$23,242
2060	\$0	\$42,987	\$297,951	\$0	\$100,032	\$0	\$440,969	0.0512	\$22,584
2061	\$0	\$44,276	\$306,889	\$0	\$103,033	\$0	\$454,198	0.0483	\$21,945
2062 2063	\$0 \$0	\$45,605 \$46,973	\$316,096 \$325,579	\$0 \$0	\$106,124 \$109,307	\$0 \$0	\$467,824 \$481,859	0.0456 0.0430	\$21,324 \$20,721
2064	\$0	\$48,382	\$335,346	\$0	\$102,587	\$0	\$496,315	0.0406	\$20,134
2065	\$0	\$49,834	\$345,407	\$0	\$115,964	\$0	\$511,204	0.0383	\$19,564
2066 2067	\$0 \$0	\$51,329 \$52,868	\$355,769 \$366,442	\$0 \$0	\$119,443 \$123,026	\$0 \$0	\$526,540 \$542,337	0.0361 0.0341	\$19,011 \$18,473
2067	\$0	\$52,808 \$54,454	\$300,442	\$0	\$123,026	\$0 \$0	\$558,607	0.0321	\$18,473
2069	\$0	\$56,088	\$388,758	\$0	\$130,519	\$0	\$575,365	0.0303	\$17,442
2070	\$0	\$57,771	\$400,421	\$0	\$134,434	\$0	\$592,626	0.0286	\$16,948
2071 2072	\$0 \$0	\$59,504 \$61,289	\$412,433 \$424,806	\$0 \$0	\$138,467 \$142,621	\$0 \$0	\$610,405 \$628,717	0.0270 0.0255	\$16,469 \$16,002
2072	\$0	\$63,128	\$424,806	\$0	\$142,621	\$0 \$0	\$647,578	0.0233	\$16,002
2074	\$0	\$65,022	\$450,677	\$0	\$151,307	\$0	\$667,006	0.0227	\$15,109
2075	\$0	\$66,972	\$464,197	\$0	\$155,846	\$0	\$687,016	0.0214	\$14,682
2076 2077	\$0 \$0	\$68,981 \$71,051	\$478,123 \$492,467	\$0 \$0	\$160,521 \$165,337	\$0 \$0	\$707,626 \$728,855	0.0202 0.0190	\$14,266 \$13,863
2078	\$0	\$73,182	\$507,241	\$0	\$103,337	\$0	\$750,721	0.0190	\$13,470
2079	\$0	\$75,378	\$522,458	\$0	\$175,406	\$0	\$773,242	0.0169	\$13,089
2080	\$0	\$77,639	\$538,132	\$0	\$180,668	\$0	\$796,440	0.0160	\$12,719
2081 2082	\$0 \$0	\$79,968 \$82,367	\$554,276 \$570,904	\$0 \$0	\$186,088 \$191,671	\$0 \$0	\$820,333 \$844,943	0.0151 0.0142	\$12,359 \$12,009
2083	\$0	\$84,838	\$588,031	\$0	\$197,421	\$0	\$870,291	0.0142	\$12,009
2084	\$0	\$87,383	\$605,672	\$0	\$203,344	\$0	\$896,400	0.0126	\$11,339
					Total Prese	ent Value of Disc	ounted Costs (Su	ım of Column (i))	\$5,274,641

Total Present Value of Discounted Costs (Sum of Column (i))
Transfer to Table 20, column (c), Exhibit F: Proposal Costs and Benefits Summaries

\$5,274,641

Comments: Assumed maintenance costs are included in the "Operations" column.

Table 11- Annual Cost of Project - PHASE 2
(All costs should be in 2009 Dollars)
Project Title: CITY OF TRACY RECYCLED WATER PROJECT

	Initial Costs		Upo	erations and Ma	intenance Cos	io i		Discounting	Jaioulalio
YEAR	(a) Grand Total Cost From Table 7 (row (i), column(d))	(b) Admin	(c) Operation	(d) Maintenance (see comments)	(e) Replacement	(f) Other	(g) Total Costs (a) ++ (f)	(h) Discount Factor	(i) Discount Costs(g) x
2009	\$0	\$0	\$0	\$0	\$0	\$0	\$0	1.0000	\$0
2010	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.9434	\$0
2011	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	0.8900 0.8396	\$0 \$0
2012	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0	0.8390	\$0
2014	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0.7473	\$0
2015	\$89,912,340	\$3,996	\$33,075	\$0	\$301,511	\$0	\$90,250,922	0.7050	\$63,623,
2016 2017	\$0 \$0	\$4,115 \$4,239	\$34,068 \$35,090	\$0 \$0	\$310,557 \$319,874	\$0 \$0	\$348,740 \$359,202	0.6651 0.6274	\$231,93 \$225,36
2018	\$0	\$4,366	\$36,142	\$0	\$329,470	\$0	\$369,978	0.5919	\$218,99
2019	\$0	\$4,497	\$37,227	\$0	\$339,354	\$0	\$381,078	0.5584	\$212,79
2020	\$0	\$13,473	\$95,678	\$0	\$349,534	\$0	\$458,686	0.5268	\$241,63
2021	\$0 \$0	\$13,877 \$14,293	\$98,549 \$101,505	\$0 \$0	\$360,020 \$370,821	\$0 \$0	\$472,446 \$486,620	0.4970 0.4688	\$234,79 \$228,14
2023	\$0	\$14,722	\$104,550	\$0	\$381,946	\$0	\$501,218	0.4423	\$221,68
2024	\$0	\$15,164	\$107,687	\$0	\$393,404	\$0	\$516,255	0.4173	\$215,41
2025	\$0	\$25,868	\$195,759	\$0	\$405,206	\$0	\$626,833	0.3936	\$246,75
2026 2027	\$0 \$0	\$26,644 \$27,443	\$201,631 \$207,680	\$0 \$0	\$417,362 \$429,883	\$0 \$0	\$645,638 \$665,007	0.3714 0.3503	\$239,76 \$232,98
2027	\$0	\$27,443	\$207,680	\$0	\$429,883	\$0 \$0	\$665,007	0.3305	\$232,98
2029	\$0	\$29,115	\$220,328	\$0	\$456,063	\$0	\$705,506	0.3118	\$219,98
2030	\$0	\$41,556	\$322,695	\$0	\$469,745	\$0	\$833,996	0.2942	\$245,32
2031	\$0 \$0	\$42,803 \$44,087	\$332,376 \$342,347	\$0 \$0	\$483,837 \$498,353	\$0 \$0	\$859,016 \$884,786	0.2775 0.2618	\$238,38 \$231,63
2032	\$0	\$45,409	\$342,347	\$0	\$498,353 \$513,303	\$0 \$0	\$884,786	0.2618	\$231,63
2034	\$0	\$46,771	\$363,196	\$0	\$528,702	\$0	\$938,670	0.2330	\$218,70
2035	\$0	\$61,585	\$485,101	\$0	\$544,563	\$0	\$1,091,249	0.2198	\$239,80
2036	\$0	\$63,432	\$499,654	\$0	\$560,900	\$0	\$1,123,987	0.2074	\$233,0
2037	\$0 \$0	\$65,335 \$67,295	\$514,644 \$530,083	\$0 \$0	\$577,727 \$595,059	\$0 \$0	\$1,157,706 \$1,192,438	0.1956 0.1846	\$226,48 \$220,07
2039	\$0	\$69,314	\$545,986	\$0	\$612,911	\$0	\$1,228,211	0.1741	\$213,84
2040	\$0	\$86,940	\$691,055	\$0	\$631,298	\$0	\$1,409,293	0.1643	\$231,48
2041	\$0	\$89,548	\$711,787	\$0	\$650,237	\$0	\$1,451,572	0.1550	\$224,93
2042	\$0 \$0	\$92,235 \$95,002	\$733,140 \$755,135	\$0 \$0	\$669,744 \$689,836	\$0 \$0	\$1,495,119 \$1,539,973	0.1462 0.1379	\$218,56 \$212,38
2044	\$0	\$97,852	\$777,789	\$0	\$710,532	\$0	\$1,586,172	0.1301	\$206,30
2045	\$0	\$113,261	\$904,380	\$0	\$731,847	\$0	\$1,749,489	0.1227	\$214,73
2046	\$0	\$116,659	\$931,511	\$0	\$753,803	\$0	\$1,801,973	0.1158	\$208,65
2047 2048	\$0 \$0	\$120,159 \$123,763	\$959,457 \$988,241	\$0 \$0	\$776,417 \$799,710	\$0 \$0	\$1,856,032 \$1,911,713	0.1092 0.1031	\$202,75 \$197,01
2049	\$0	\$123,703	\$1,017,888	\$0	\$823,701	\$0	\$1,969,065	0.1031	\$197,01
2050	\$0	\$131,301	\$1,048,424	\$0	\$848,412	\$0	\$2,028,137	0.0917	\$186,01
2051	\$0	\$135,240	\$1,079,877	\$0	\$873,864	\$0	\$2,088,981	0.0865	\$180,75
2052 2053	\$0 \$0	\$139,297 \$143,476	\$1,112,273 \$1,145,642	\$0 \$0	\$900,080 \$927,082	\$0 \$0	\$2,151,650 \$2,216,200	0.0816 0.0770	\$175,63 \$170,66
2054	\$0	\$143,470	\$1,145,042	\$0	\$927,082	\$0	\$2,282,686	0.0770	\$170,00
2055	\$0	\$152,213	\$1,215,411	\$0	\$983,542	\$0	\$2,351,166	0.0685	\$161,14
2056	\$0	\$156,780	\$1,251,874	\$0	\$1,013,048	\$0	\$2,421,701	0.0647	\$156,58
2057	\$0	\$161,483	\$1,289,430	\$0	\$1,043,440	\$0	\$2,494,352	0.0610	\$152,15
2058	\$0 \$0	\$166,328 \$171,318	\$1,328,113 \$1,367,956	\$0 \$0	\$1,074,743 \$1,106,985	\$0 \$0	\$2,569,183 \$2,646,259	0.0575 0.0543	\$147,84 \$143,66
2060	\$0	\$176,457	\$1,408,995	\$0	\$1,140,195	\$0	\$2,725,646	0.0512	\$139,59
2061	\$0	\$181,751	\$1,451,265	\$0	\$1,174,400	\$0	\$2,807,416	0.0483	\$135,64
2062	\$0	\$187,203	\$1,494,802 \$1,530,647	\$0	\$1,209,632 \$1,245,021	\$0 \$0	\$2,891,638	0.0456	\$131,80
2063 2064	\$0 \$0	\$192,819 \$198,604	\$1,539,647 \$1,585,836	\$0 \$0	\$1,245,921 \$1,283,299	\$0 \$0	\$2,978,387 \$3,067,739	0.0430 0.0406	\$128,0° \$124,45
2065	\$0	\$204,562	\$1,633,411	\$0	\$1,321,798	\$0	\$3,007,739	0.0383	\$120,92
2066	\$0	\$210,699	\$1,682,413	\$0	\$1,361,452	\$0	\$3,254,564	0.0361	\$117,50
2067	\$0	\$217,020	\$1,732,886	\$0	\$1,402,295	\$0	\$3,352,201	0.0341	\$114,18
2068	\$0 \$0	\$223,531 \$230,236	\$1,784,872 \$1,838,418	\$0 \$0	\$1,444,364 \$1,487,695	\$0 \$0	\$3,452,767 \$3,556,350	0.0321	\$110,9 <sup>2</sup> \$107,80
2070	\$0	\$230,230	\$1,893,571	\$0	\$1,532,326	\$0	\$3,663,041	0.0303	\$107,80
2071	\$0	\$244,258	\$1,950,378	\$0	\$1,578,296	\$0	\$3,772,932	0.0270	\$101,79
2072	\$0	\$251,586	\$2,008,890	\$0	\$1,625,645	\$0	\$3,886,120	0.0255	\$98,91
2073 2074	\$0 \$0	\$259,133 \$266,907	\$2,069,156 \$2,131,231	\$0 \$0	\$1,674,414 \$1,724,647	\$0 \$0	\$4,002,703 \$4,122,785	0.0240 0.0227	\$96,11 \$93,39
2075	\$0	\$200,907	\$2,131,231	\$0	\$1,776,386	\$0	\$4,122,783	0.0227	\$93,39
2076	\$0	\$283,162	\$2,261,023	\$0	\$1,829,678	\$0	\$4,373,862	0.0202	\$88,18
2077	\$0	\$291,657	\$2,328,854	\$0	\$1,884,568	\$0	\$4,505,078	0.0190	\$85,68
2078 2079	\$0 \$0	\$300,406	\$2,398,719 \$2,470,681	\$0 \$0	\$1,941,105 \$1,999,338	\$0 \$0	\$4,640,230	0.0179	\$83,26 \$80,90
2079	\$0 \$0	\$309,418 \$318,701	\$2,470,681 \$2,544,801	\$0 \$0	\$1,999,338 \$2,059,318	\$0 \$0	\$4,779,437 \$4,922,820	0.0169 0.0160	\$80,90 \$78,61
2081	\$0	\$328,262	\$2,621,145	\$0	\$2,121,098	\$0	\$5,070,505	0.0151	\$76,38
2082	\$0	\$338,110	\$2,699,780	\$0	\$2,184,731	\$0	\$5,222,620	0.0142	\$74,22
2083	\$0	\$348,253	\$2,780,773	\$0	\$2,250,273	\$0	\$5,379,299	0.0134	\$72,12
2084	\$0	\$358,701	\$2,864,196	\$0	\$2,317,781 Total Press	\$0 ant Value of Disc	\$5,540,678 counted Costs (Su	0.0126	\$70,08 <b>\$75,38</b>
					I J Lai F I C St	talue vi Dibl		v. vviuiiiii (i))	, wi J, J

		Project Title: CIT		be in 2009 doll CYCLED WATE		
		Cos	sts		Discountin	ng Calculations
(a)	(b)	(c)	(d)	(e)	<b>(f)</b>	(g)
		oided Project Na	me): PHASE 1 A	voided Water	Discount	Discounted Cost
	Supply Costs		( ( D ) . (	147-6	Factor	(e) x (f)
		ct Description: o obtain addition				
~	projected water		ai water suppiy	to meet		
YEAR	Avoided	Avoided	Avoided	Total Cost		
×	Capital Costs	Replacement	Operations	Avoided for		
		Costs	and	Individual		
			Maintenance	Alternatives		
			Costs			
2009	\$0	\$0	<b>[1]</b> \$0	(b) + (c) + (d) \$0	1.0000	\$0
2010	\$0	\$0 \$0	\$0	\$0 \$0	0.9434	\$0
2011	\$0	\$0	\$0	\$0	0.8900	\$0
2012	\$0	\$0	\$0	\$0	0.8396	\$0
2013	\$2,644	\$0	\$0	\$2,644	0.7921	\$2,094
2014	\$5,446	\$0	\$0	\$5,446	0.7473	\$4,069
2015	\$8,414 \$11,555	\$0 \$0	\$0 \$0	\$8,414 \$11,555	0.7050 0.6651	\$5,931 \$7,685
2017	\$11,333	\$0 \$0	\$0	\$11,333	0.6031	\$9,334
2018	\$15,323	\$0 \$0	\$0	\$15,323	0.5919	\$9,070
2019	\$15,783	\$0	\$0	\$15,783	0.5584	\$8,813
2020	\$16,256	\$0	\$0	\$16,256	0.5268	\$8,564
2021	\$16,744	\$0	\$0	\$16,744	0.4970	\$8,321
2022	\$17,246	\$0	\$0	\$17,246	0.4688	\$8,086
2023	\$17,764	\$0 \$0	\$0 \$0	\$17,764 \$18,207	0.4423	\$7,857 \$7,635
2024	\$18,297 \$18,846	\$0 \$0	\$0 \$0	\$18,297 \$18,846	0.4173 0.3936	\$7,635 \$7,419
2025	\$18,840	\$0 \$0	\$0	\$18,840	0.3936	\$7,209
2027	\$19,993	\$0	\$0	\$19,993	0.3503	\$7,005
2028	\$20,593	\$0	\$0	\$20,593	0.3305	\$6,806
2029	\$21,211	\$0	\$0	\$21,211	0.3118	\$6,614
2030	\$21,847	\$0	\$0	\$21,847	0.2942	\$6,427
2031	\$22,503	\$0	\$0	\$22,503	0.2775	\$6,245
2032	\$23,178 \$23,873	\$0 \$0	\$0 \$0	\$23,178 \$23,873	0.2618 0.2470	\$6,068 \$5,896
2034	\$24,589	\$0 \$0	\$0	\$24,589	0.2330	\$5,729
2035	\$25,327	\$0	\$0	\$25,327	0.2198	\$5,567
2036	\$26,087	\$0	\$0	\$26,087	0.2074	\$5,410
2037	\$26,869	\$0	\$0	\$26,869	0.1956	\$5,256
2038	\$27,676	\$0	\$0	\$27,676	0.1846	\$5,108
2039	\$28,506	\$0 \$0	\$0	\$28,506	0.1741	\$4,963
2040	\$29,361 \$30,242	\$0 \$0	\$0 \$0	\$29,361 \$30,242	0.1643 0.1550	\$4,823 \$4,686
2042	\$31,149	\$0 \$0	\$0	\$31,149	0.1462	\$4,554
2043	\$32,083	\$0	\$0	\$32,083	0.1379	\$4,425
2044	\$33,046	\$0	\$0	\$33,046	0.1301	\$4,299
2045	\$34,037	\$0	\$0	\$34,037	0.1227	\$4,178
2046	\$35,059	\$0	\$0	\$35,059	0.1158	\$4,060
2047 2048	\$36,110 \$37,194	\$0 \$0	\$0 \$0	\$36,110 \$37,194	0.1092 0.1031	\$3,945 \$3,833
2049	\$38,309	\$0 \$0	\$0	\$38,309	0.1031	\$3,725
2050	\$39,459	\$0	\$0	\$39,459	0.0917	\$3,619
2051	\$40,642	\$0	\$0	\$40,642	0.0865	\$3,517
2052	\$41,862	\$0	\$0	\$41,862	0.0816	\$3,417
2053	\$43,118	\$0	\$0	\$43,118	0.0770	\$3,320
2054 2055	\$44,411 \$45,743	\$0 \$0	\$0 \$0	\$44,411 \$45,743	0.0727	\$3,226 \$3,135
2055	\$45,743 \$47,116	\$0 \$0	\$0 \$0	\$45,743 \$47,116	0.0685 0.0647	\$3,135 \$3,046
2057	\$48,529	\$0 \$0	\$0	\$48,529	0.0610	\$2,960
2058	\$49,985	\$0	\$0	\$49,985	0.0575	\$2,876
2059	\$51,485	\$0	\$0	\$51,485	0.0543	\$2,795
2060	\$53,029	\$0	\$0	\$53,029	0.0512	\$2,716
2061	\$54,620 \$56,250	\$0 \$0	\$0 \$0	\$54,620 \$56,250	0.0483	\$2,639 \$2,564
2062	\$56,259 \$57,946	\$0 \$0	\$0 \$0	\$56,259 \$57,946	0.0456 0.0430	\$2,564 \$2,492
2064	\$59,685	\$0 \$0	\$0	\$59,685	0.0430	\$2,421
2065	\$61,475	\$0	\$0	\$61,475	0.0383	\$2,353
2066	\$63,320	\$0	\$0	\$63,320	0.0361	\$2,286
2067	\$65,219	\$0	\$0	\$65,219	0.0341	\$2,221
2068	\$67,176	\$0	\$0	\$67,176	0.0321	\$2,159
2069	\$69,191 \$71,267	\$0 \$0	\$0 \$0	\$69,191 \$71,267	0.0303 0.0286	\$2,097 \$2,038
2071	\$73,405	\$0 \$0	\$0	\$73,405	0.0280	\$1,980
2072	\$75,607	\$0	\$0	\$75,607	0.0255	\$1,924
2073	\$77,875	\$0	\$0	\$77,875	0.0240	\$1,870
2074	\$80,211	\$0	\$0	\$80,211	0.0227	\$1,817
2075	\$82,618	\$0	\$0	\$82,618	0.0214	\$1,766
2076 2077	\$85,096	\$0 \$0	\$0 \$0	\$85,096 \$87,640	0.0202	\$1,716 \$1,667
2077	\$87,649 \$90,279	\$0 \$0	\$0 \$0	\$87,649 \$90,279	0.0190 0.0179	\$1,667 \$1,620
2079	\$90,279	\$0 \$0	\$0 \$0	\$90,279	0.0179	\$1,620
2080	\$95,777	\$0	\$0	\$95,777	0.0160	\$1,529
2081	\$98,650	\$0	\$0	\$98,650	0.0151	\$1,486
2082	\$101,609	\$0	\$0	\$101,609	0.0142	\$1,444
2083	\$104,658	\$0	\$0	\$104,658	0.0134	\$1,403
2084	\$107,797	\$0	\$0	\$107,797	0.0126	\$1,364
			iotal Pre		iscounted Costs n of Column (g))	\$302,765
			(%) /		aimed by Project	100%
			1 /// -			

Comments: Assumes 3.0% annual increase in water supply costs. [1] Annual O&M costs are included in the capital cost estimates.

Table 13B - Annual Costs of Avoided Projects - PHASE 1  (All avoided costs should be in 2009 dollars)  Project Title: CITY OF TRACY RECYCLED WATER PROJECT										
	Pro	oject Title: CITY O	F TRACY RECY	CLED WATER PI		ng Calculations				
(a)	(b)	(c)	(d)	(e)	(f)	(g)				
	Alternative (Avoided Temperature Control Avoided Project Desc water system will avo wastewater effluent f	Treatment Costs cription: Diversio id necessary treat	n of wastewater tment of a porti	r into recycled on of the	Discount Factor	Discounted Costs (e) x (f)				
YEAR	Avoided Capital Costs	Avoided Replacement Costs	Avoided Operations and Maintenance Costs	Total Cost Avoided for Individual Alternatives						
2009	\$0	\$0	\$0	(b) + (c) + (d) \$0	1.0000	\$0				
2010	\$0	\$0	\$0	\$0	0.9434	\$0				
2011 2012	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	0.8900 0.8396	\$0 \$0				
2013	\$32,776	\$0 \$0	\$983	\$33,760	0.7921	\$26,741				
2014 2015	\$67,519 \$104,317	\$0 \$0	\$2,026 \$3,130	\$69,545 \$107,446	0.7473 0.7050	\$51,968 \$75,745				
2016	\$143,262	\$0	\$4,298	\$147,560	0.6651	\$98,136				
2017 2018	\$184,450 \$189,983	\$0 \$0	\$5,533 \$5,699	\$189,983 \$195,683	0.6274	\$119,198 \$115,824				
2019	\$195,683	\$0	\$5,870	\$201,553	0.5584	\$112,546				
2020 2021	\$201,553 \$207,600	\$0 \$0	\$6,047 \$6,228	\$207,600 \$213,828	0.5268 0.4970	\$109,361 \$106,266				
2022	\$213,828	\$0	\$6,415	\$220,243	0.4688	\$103,258				
2023 2024	\$220,243 \$226,850	\$0 \$0	\$6,607 \$6,805	\$226,850 \$233,655	0.4423 0.4173	\$100,336 \$97,496				
2025	\$233,655	\$0	\$7,010	\$240,665	0.3936	\$94,737				
2026 2027	\$240,665 \$247,885	\$0 \$0	\$7,220 \$7,437	\$247,885 \$255,322	0.3714 0.3503	\$92,056 \$89,450				
2028	\$255,322	\$0	\$7,660	\$262,981	0.3305	\$86,919				
2029	\$262,981 \$270,871	\$0 \$0	\$7,889 \$8,126	\$270,871 \$278,997	0.3118 0.2942	\$84,459 \$82,068				
2031	\$278,997	\$0	\$8,370	\$287,367	0.2775	\$79,746				
2032	\$287,367 \$295,988	\$0 \$0	\$8,621 \$8,880	\$295,988 \$304,867	0.2618	\$77,489 \$75,296				
2034	\$304,867	\$0	\$9,146	\$314,013	0.2330	\$73,165				
2035	\$314,013 \$323,434	\$0 \$0	\$9,420 \$9,703	\$323,434 \$333,137	0.2198 0.2074	\$71,094 \$69,082				
2037	\$333,137	\$0	\$9,994	\$343,131	0.1956	\$67,127				
2038	\$343,131 \$353,425	\$0 \$0	\$10,294 \$10,603	\$353,425 \$364,027	0.1846 0.1741	\$65,227 \$63,381				
2040	\$364,027	\$0	\$10,921	\$374,948	0.1643	\$61,587				
2041 2042	\$374,948 \$386,197	\$0 \$0	\$11,248 \$11,586	\$386,197 \$397,783	0.1550 0.1462	\$59,844 \$58,150				
2043	\$397,783	\$0	\$11,933	\$409,716	0.1379	\$56,505				
2044 2045	\$409,716 \$422,008	\$0 \$0	\$12,291 \$12,660	\$422,008 \$434,668	0.1301 0.1227	\$54,905 \$53,351				
2046	\$434,668	\$0 ©0	\$13,040	\$447,708	0.1158	\$51,842				
2047 2048	\$447,708 \$461,139	\$0 \$0	\$13,431 \$13,834	\$461,139 \$474,973	0.1092 0.1031	\$50,374 \$48,949				
2049 2050	\$474,973	\$0 \$0	\$14,249	\$489,222 \$503,899	0.0972 0.0917	\$47,563 \$46,217				
2051	\$489,222 \$503,899	\$0 \$0	\$14,677 \$15,117	\$519,016	0.0917	\$44,909				
2052 2053	\$519,016	\$0 \$0	\$15,570	\$534,587 \$550,634	0.0816	\$43,638 \$42,403				
2054	\$534,587 \$550,624	\$0	\$16,038 \$16,519	\$550,624 \$567,143	0.0770 0.0727	\$42,403 \$41,203				
2055	\$567,143 \$584,157	\$0 \$0	\$17,014 \$17,525	\$584,157 \$601,682	0.0685	\$40,037 \$38,004				
2056 2057	\$584,157 \$601,682	\$0 \$0	\$17,525 \$18,050	\$601,682 \$619,732	0.0647 0.0610	\$38,904 \$37,803				
2058 2059	\$619,732 \$638,324	\$0 \$0	\$18,592 \$19,150	\$638,324 \$657,474	0.0575 0.0543	\$36,733 \$35,693				
2060	\$657,474	\$0	\$19,130 \$19,724	\$677,198	0.0543	\$35,693				
2061 2062	\$677,198 \$697,514	\$0 \$0	\$20,316 \$20,925	\$697,514 \$718,440	0.0483 0.0456	\$33,701 \$32,748				
2063	\$718,440	\$0	\$21,553	\$739,993	0.0430	\$31,821				
2064 2065	\$739,993 \$762,193	\$0 \$0	\$22,200 \$22,866	\$762,193 \$785,058	0.0406 0.0383	\$30,920 \$30,045				
2066	\$785,058	\$0	\$23,552	\$808,610	0.0361	\$29,195				
2067 2068	\$808,610 \$832,868	\$0 \$0	\$24,258 \$24,986	\$832,868 \$857,854	0.0341	\$28,368 \$27,566				
2069	\$857,854	\$0	\$25,736	\$883,590	0.0303	\$26,785				
2070 2071	\$883,590 \$910,098	\$0 \$0	\$26,508 \$27,303	\$910,098 \$937,401	0.0286 0.0270	\$26,027 \$25,291				
2072	\$937,401	\$0	\$28,122	\$965,523	0.0255	\$24,575				
2073 2074	\$965,523 \$994,488	\$0 \$0	\$28,966 \$29,835	\$994,488 \$1,024,323	0.0240 0.0227	\$23,879 \$23,204				
2075	\$1,024,323	\$0	\$30,730	\$1,055,053	0.0214	\$22,547				
2076 2077	\$1,055,053 \$1,086,704	\$0 \$0	\$31,652 \$32,601	\$1,086,704 \$1,119,306	0.0202	\$21,909 \$21,289				
2078	\$1,119,306	\$0	\$33,579	\$1,152,885	0.0179	\$20,686				
2079 2080	\$1,152,885 \$1,187,471	\$0 \$0	\$34,587 \$35,624	\$1,187,471 \$1,223,095	0.0169 0.0160	\$20,101 \$19,532				
2081	\$1,223,095	\$0	\$36,693	\$1,259,788	0.0151	\$18,979				
2082 2083	\$1,259,788 \$1,297,582	\$0 \$0	\$37,794 \$38,927	\$1,297,582 \$1,336,509	0.0142	\$18,442 \$17,920				
2084	\$1,336,509	\$0	\$40,095	\$1,376,605	0.0126	\$17,413				
			Total Pre		scounted Costs n of Column (g))	\$3,866,405				
				Avoided Cost Cla	aimed by Project	100%				
	Total Present Value of (Total Present)	Discounted Avoid Value of Discount				\$3,866,40				
omments	: Assumes 3.0% annua			535t Gla						

		Cost				ng Calculations
(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Supply Costs	ded Project Name	e): PHASE 2 Avo	ided Water	Discount Factor	Discounted Cost (e) x (f)
		Description: Use	of Recycled Wa	ater will	. 2000.	(6) // (1)
		obtain additional	water supply to	meet		
YEAR	projected water Avoided Capital		Avoided	Total Cost		
X	Costs	Replacement	Operations	Avoided for		
		Costs	and	Individual		
			Maintenance Costs	Alternatives		
			00313	(b) + (c) + (d)		
2009	\$0	\$0	\$0	\$0	1.0000	\$0
2010 2011	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	0.9434	\$0 \$0
2012	\$0	\$0	\$0	\$0	0.8396	\$0
2013	\$0	\$0	\$0	\$0	0.7921	\$0
2014 2015	\$0 \$1,412,888	\$0 \$0	\$0 \$66,701	\$0 \$1,479,589	0.7473 0.7050	\$0 \$1,043,052
2016	\$1,455,275	\$0	\$68,702	\$1,479,389	0.7050	\$1,043,032
2017	\$1,498,933	\$0	\$70,763	\$1,569,696	0.6274	\$984,847
2018 2019	\$1,543,901 \$1,590,218	\$0 \$0	\$72,886 \$75,073	\$1,616,787 \$1,665,291	0.5919	\$956,974 \$929,890
2019	\$1,590,218 \$10,744,674	\$0 \$0	\$75,073 \$224,912	\$1,665,291 \$10,969,585	0.5584 0.5268	\$929,890 \$5,778,641
2021	\$11,067,014	\$0	\$231,659	\$11,298,673	0.4970	\$5,615,094
2022	\$11,399,024 \$11,740,995	\$0 \$0	\$238,609 \$245,767	\$11,637,633 \$11,986,762	0.4688 0.4423	\$5,456,176 \$5,301,756
2023	\$11,740,995 \$12,093,225	\$0 \$0	\$245,767 \$253,140	\$11,986,762 \$12,346,365	0.4423	\$5,301,756 \$5,151,707
2025	\$23,013,240	\$0	\$431,828	\$23,445,067	0.3936	\$9,229,064
2026 2027	\$23,703,637 \$24,414,746	\$0 \$0	\$444,782 \$458,126	\$24,148,419 \$24,872,872	0.3714	\$8,967,864 \$8,714,056
2028	\$24,414,746	\$0 \$0	\$458,126	\$24,872,872	0.3305	\$8,714,056
2029	\$25,901,604	\$0	\$486,026	\$26,387,630	0.3118	\$8,227,788
2030	\$38,594,265 \$39,752,093	\$0 \$0	\$693,714 \$714,526	\$39,287,980 \$40,466,619	0.2942 0.2775	\$11,556,772 \$11,229,693
2032	\$40,944,656	\$0 \$0	\$714,320	\$41,680,618	0.2773	\$10,911,872
2033	\$42,172,996	\$0	\$758,041	\$42,931,036	0.2470	\$10,603,045
2034	\$43,438,186 \$58,554,793	\$0 \$0	\$780,782 \$1,028,070	\$44,218,968 \$59,582,863	0.2330 0.2198	\$10,302,959 \$13,096,911
2036	\$60,311,437	\$0	\$1,028,070	\$61,370,349	0.2178	\$12,726,244
2037	\$62,120,780	\$0	\$1,090,680	\$63,211,460	0.1956	\$12,366,067
2038	\$63,984,403 \$65,903,935	\$0 \$0	\$1,123,400 \$1,157,102	\$65,107,803 \$67,061,038	0.1846 0.1741	\$12,016,084 \$11,676,006
2040	\$83,894,641	\$0	\$1,137,102	\$85,345,978	0.1741	\$14,018,490
2041	\$86,411,481	\$0	\$1,494,876	\$87,906,357	0.1550	\$13,621,740
2042	\$89,003,825 \$91,673,940	\$0 \$0	\$1,539,723 \$1,585,914	\$90,543,548 \$93,259,854	0.1462 0.1379	\$13,236,219 \$12,861,609
2043	\$94,424,158	\$0	\$1,633,492	\$95,259,654	0.1379	\$12,497,601
2045	\$110,105,801	\$0	\$1,890,730	\$111,996,531	0.1227	\$13,746,541
2046 2047	\$113,408,975 \$116,811,244	\$0 \$0	\$1,947,452 \$2,005,875	\$115,356,426 \$118,817,119	0.1158	\$13,357,488 \$12,979,445
2048	\$120,315,581	\$0	\$2,066,051	\$122,381,633	0.1032	\$12,612,103
2049	\$123,925,049	\$0	\$2,128,033	\$126,053,082	0.0972	\$12,255,156
2050 2051	\$127,642,800 \$131,472,084	\$0 \$0	\$2,191,874 \$2,257,630	\$129,834,674 \$133,729,715	0.0917	\$11,908,312 \$11,571,285
2052	\$135,416,247	\$0	\$2,325,359	\$137,741,606	0.0816	\$11,243,795
2053	\$139,478,734	\$0	\$2,395,120	\$141,873,854	0.0770	\$10,925,575
2054	\$143,663,096 \$147,972,989	\$0 \$0	\$2,466,974 \$2,540,983	\$146,130,070 \$150,513,972	0.0727 0.0685	\$10,616,360 \$10,315,897
2056	\$152,412,179	\$0	\$2,540,983	\$155,029,391	0.0647	\$10,023,938
2057	\$156,984,544	\$0	\$2,695,729	\$159,680,273	0.0610	\$9,740,242
2058	\$161,694,080 \$166,544,903	\$0 \$0	\$2,776,600 \$2,859,898	\$164,470,681 \$169,404,801	0.0575	\$9,464,574 \$9,196,709
2060	\$171,541,250	\$0	\$2,945,695	\$174,486,945	0.0512	\$8,936,425
2061	\$176,687,487	\$0 \$0	\$3,034,066	\$179,721,554	0.0483	\$8,683,507
2062	\$181,988,112 \$187,447,755	\$0 \$0	\$3,125,088 \$3,218,841	\$185,113,200 \$190,666,596	0.0456	\$8,437,748 \$8,198,943
2064	\$193,071,188	\$0	\$3,315,406	\$196,386,594	0.0406	\$7,966,898
2065 2066	\$198,863,324	\$0 \$0	\$3,414,868 \$3,517,314	\$202,278,192	0.0383	\$7,741,420 \$7,522,323
2067	\$204,829,223 \$210,974,100	\$0 \$0	\$3,517,314	\$208,346,538 \$214,596,934	0.0361	\$7,522,323 \$7,309,427
2068	\$217,303,323	\$0	\$3,731,519	\$221,034,842	0.0321	\$7,102,556
2069 2070	\$223,822,423	\$0 \$0	\$3,843,464 \$3,958,768	\$227,665,887	0.0303 0.0286	\$6,901,541 \$6,706,214
2070	\$230,537,096 \$237,453,208	\$0 \$0	\$3,958,768 \$4,077,531	\$234,495,864 \$241,530,740	0.0286	\$6,706,214 \$6,516,415
2072	\$244,576,805	\$0	\$4,199,857	\$248,776,662	0.0255	\$6,331,989
2073 2074	\$251,914,109 \$259,471,532	\$0 \$0	\$4,325,853 \$4,455,629	\$256,239,962 \$263,927,161	0.0240	\$6,152,781 \$5,978,646
2075	\$259,471,532	\$0 \$0	\$4,433,629	\$203,927,101	0.0227	\$5,809,439
2076	\$275,273,348	\$0	\$4,726,976	\$280,000,325	0.0202	\$5,645,021
2077 2078	\$283,531,549 \$292,037,495	\$0 \$0	\$4,868,786 \$5,014,849	\$288,400,335 \$297,052,345	0.0190	\$5,485,256 \$5,330,013
2079	\$300,798,620	\$0	\$5,165,295	\$305,963,915	0.0179	\$5,179,164
2080	\$309,822,579	\$0	\$5,320,254	\$315,142,832	0.0160	\$5,032,584
2081	\$319,117,256 \$328,690,774	\$0 \$0	\$5,479,861 \$5,644,257	\$324,597,117 \$334,335,031	0.0151 0.0142	\$4,890,152 \$4,751,751
2083	\$328,690,774	\$0 \$0	\$5,644,257 \$5,813,585	\$334,335,031	0.0142	\$4,751,751
2084	\$348,708,042	\$0	\$5,987,992	\$354,696,034	0.0126	\$4,486,591
			Total Pre	sent Value of Di	scounted Costs n of Column (g))	\$590,230,676
			(0/)		imed by Project	100%

(a)	(b)		osts (d)	(0)		g Calculations
(a)	(b)	(c) Nvoided Project N	(d)	(e)	(f) Discount	(g) Discounted Cos
		roject N Tempature Contro			Factor	(e) x (f)
		ect Description:			1 dotor	(6) X (1)
		er system will avo				
		e wastewater effl	•			
YEAR	before discha	arge.	•			
ΧE	Avoided	Avoided	Avoided	Total Cost		
	Capital	Replacement	Operations	Avoided for		
	Costs	Costs	and	Individual		
			Maintenance	Alternatives		
			Costs			
2000	фо	φo	<b>#</b> 0	(b) + (c) + (d)	1 0000	#0
2009 2010	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	1.0000 0.9434	\$0 \$0
2011	\$0	\$0 \$0	\$0	\$0	0.8900	\$0
2012	\$0	\$0	\$0	\$0	0.8396	\$0
2013	\$0	\$0	\$0	\$0	0.7921	\$0
2014	\$0	\$0	\$0	\$0	0.7473	\$0
2015	\$61,112	\$0	\$1,833	\$62,945	0.7050	\$44,374
2016	\$62,945	\$0	\$1,888	\$64,834	0.6651	\$43,118
2017	\$64,834	\$0 \$0	\$1,945	\$66,779	0.6274	\$41,898 \$40,712
2018 2019	\$66,779 \$68,782	\$0 \$0	\$2,003 \$2,063	\$68,782 \$70,846	0.5919	\$40,712 \$39,560
2019 2020	\$68,782 \$206,066	\$0 \$0	\$2,063 \$6,182	\$70,846 \$212,248	0.5584 0.5268	\$39,560 \$111,809
2020 2021	\$200,000	\$0 \$0	\$6,367	\$212,248	0.5268	\$111,809
2022	\$218,615	\$0	\$6,558	\$215,013	0.4688	\$105,570
2023	\$225,174	\$0	\$6,755	\$231,929	0.4423	\$102,582
2024	\$231,929	\$0	\$6,958	\$238,887	0.4173	\$99,679
2025	\$395,644	\$0	\$11,869	\$407,513	0.3936	\$160,416
2026	\$407,513	\$0	\$12,225	\$419,738	0.3714	\$155,876
2027	\$419,738	\$0 \$0	\$12,592 \$12,970	\$432,331 \$445,300	0.3503	\$151,464 \$147,178
2028 2029	\$432,331 \$445,300	\$0 \$0	\$12,970 \$13,359	\$445,300 \$458,659	0.3305 0.3118	\$147,178 \$143,012
2030	\$635,586	\$0 \$0	\$15,559	\$654,654	0.3118	\$143,012
2031	\$654,654	\$0	\$19,640	\$674,294	0.2775	\$187,120
2032	\$674,294	\$0	\$20,229	\$694,522	0.2618	\$181,824
2033	\$694,522	\$0	\$20,836	\$715,358	0.2470	\$176,678
2034	\$715,358	\$0	\$21,461	\$736,819	0.2330	\$171,678
2035	\$941,926	\$0	\$28,258	\$970,183	0.2198	\$213,256
2036	\$970,183	\$0 \$0	\$29,106	\$999,289	0.2074	\$207,221
2037 2038	\$999,289 \$1,029,268	\$0 \$0	\$29,979 \$30,878	\$1,029,268 \$1,060,146	0.1956 0.1846	\$201,356 \$195,657
2039	\$1,060,146	\$0 \$0	\$31,804	\$1,000,140	0.1741	\$190,120
2040	\$1,329,725	\$0	\$39,892	\$1,369,617	0.1643	\$224,966
2041	\$1,369,617	\$0	\$41,089	\$1,410,705	0.1550	\$218,599
2042	\$1,410,705	\$0	\$42,321	\$1,453,027	0.1462	\$212,412
2043	\$1,453,027	\$0	\$43,591	\$1,496,617	0.1379	\$206,401
2044	\$1,496,617	\$0	\$44,899	\$1,541,516	0.1301	\$200,559
2045	\$1,732,301	\$0	\$51,969	\$1,784,270	0.1227	\$219,003
2046 2047	\$1,784,270 \$1,837,798	\$0 \$0	\$53,528 \$55,134	\$1,837,798 \$1,892,932	0.1158 0.1092	\$212,804 \$206,782
2048	\$1,892,932	\$0 \$0	\$56,788	\$1,949,720	0.1032	\$200,782
2049	\$1,949,720	\$0	\$58,492	\$2,008,211	0.0972	\$195,243
2050	\$2,008,211	\$0	\$60,246	\$2,068,458	0.0917	\$189,717
2051	\$2,068,458	\$0	\$62,054	\$2,130,512	0.0865	\$184,348
2052	\$2,130,512	\$0	\$63,915	\$2,194,427	0.0816	\$179,130
2053	\$2,194,427	\$0	\$65,833	\$2,260,260	0.0770	\$174,061
2054	\$2,260,260	\$0 \$0	\$67,808	\$2,328,067	0.0727	\$169,134 \$164,247
2055 2056	\$2,328,067 \$2,397,909	\$0 \$0	\$69,842 \$71,937	\$2,397,909 \$2,469,847	0.0685 0.0647	\$164,347 \$159,696
2056 2057	\$2,397,909	\$0 \$0	\$71,937	\$2,469,847	0.0647	\$159,696
2058	\$2,543,942	\$0	\$76,318	\$2,543,942	0.0575	\$150,785
2059	\$2,620,260	\$0	\$78,608	\$2,698,868	0.0543	\$146,517
2060	\$2,698,868	\$0	\$80,966	\$2,779,834	0.0512	\$142,370
2061	\$2,779,834	\$0	\$83,395	\$2,863,229	0.0483	\$138,341
2062	\$2,863,229	\$0	\$85,897	\$2,949,126	0.0456	\$134,426
2063	\$2,949,126	\$0 \$0	\$88,474	\$3,037,600	0.0430	\$130,621
2064 2065	\$3,037,600 \$3,128,728	\$0 \$0	\$91,128 \$93,862	\$3,128,728 \$3,222,590	0.0406	\$126,924 \$123,332
2066	\$3,128,728	\$0 \$0	\$95,862	\$3,222,390	0.0361	\$123,332 \$119,842
2067	\$3,319,268	\$0	\$99,578	\$3,418,846	0.0341	\$116,450
2068	\$3,418,846	\$0	\$102,565	\$3,521,411	0.0321	\$113,154
2069	\$3,521,411	\$0	\$105,642	\$3,627,053	0.0303	\$109,952
2070	\$3,627,053	\$0	\$108,812	\$3,735,865	0.0286	\$106,840
2071	\$3,735,865	\$0	\$112,076	\$3,847,941	0.0270	\$103,816
2072	\$3,847,941	\$0 \$0	\$115,438	\$3,963,379	0.0255	\$100,878
2073 2074	\$3,963,379	\$0 \$0	\$118,901 \$122,468	\$4,082,280 \$4,204,749	0.0240	\$98,023 \$95,249
2074	\$4,082,280	\$0 \$0	\$122,468	\$4,204,749	0.0227	\$95,249 \$92,553
2076	\$4,330,891	\$0	\$120,142	\$4,350,891	0.0214	\$89,934
2077	\$4,460,818	\$0	\$133,825	\$4,594,643	0.0202	\$87,388
2078	\$4,594,643	\$0	\$137,839	\$4,732,482	0.0179	\$84,915
2079	\$4,732,482	\$0	\$141,974	\$4,874,456	0.0169	\$82,512
2080	\$4,874,456	\$0	\$146,234	\$5,020,690	0.0160	\$80,176
2081	\$5,020,690	\$0	\$150,621	\$5,171,311	0.0151	\$77,907
2082	\$5,171,311	\$0	\$155,139	\$5,326,450	0.0142	\$75,702
2083	\$5,326,450	\$0 \$0	\$159,793 \$164,597	\$5,486,243	0.0134	\$73,560 \$71,479
2084	\$5,486,243	\$0	\$164,587	\$5,650,831 sent Value of Dis	0.0126	\$71,478
			iolai Pre		of Column (g))	\$9,760,327
					imed by Project	100%

#### **Table 14 - Annual Other Water Supply Benefits**

(All benefits should be in 2009 dollars)

Project Title: CITY OF TRACY RECYCLED WATER PROJECT

(a)	(b)	(c)	(d)	(e)	(f)
Year	Type of	Description of Benefit	Annual	Discount	Discounted
	Benefit		Benefits	Factor	Benefits
			(\$)		(d) x (e)
			(1)	(1)	(1)
2009	a	Water Recycling - The project will simultaneously		1.000	\$0
		reduce potable and irrigation water demands while			
		also reducing wastewater loads that would			
		otherwise be dishcharged within the San Joaquin			
		River. Reduction in wastewater loads will help the			
		City reduce energy consumption by diverting			
		treated water into the recycled water system. On a			
		gallon for gallon basis, the use of recycled water			
		will enable the City to stay within its existing			
		NPDES permit discharge limit. From an economic			
		development standpoint, that means that more			
		development would be able to be accommodated			
		within the current discharge permit than otherwise would be possible but for the recycled water			
		diversion.			
	b	Water Conservation - Under the State's		1.000	\$0
		calculations for water conservation, recycled water		1.000	ΨΟ
		use offers a one-to-one benefit for water demand			
		reduction. The City's recycled water master plan is			
		a key component in the City's efforts to comply			
		with SBX7 to reduce water demand by 20% by			
		2020.			
	С	Surface Water and Ground Water Quality -		1.000	\$0
		Reducing demands on a one-to-one basis on		1.000	ΨΟ
		surface water and ground water sources will help			
		to preserve the quality of those sources. In the			
		future, the City could use recycled water as a			
		means to provide water sources for potential			
		groundwater recharge program.			
		8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
2010	a			0.943	\$0
	С			0.943	\$0
2011				0.890	\$0
2011	a b			0.890	\$0 \$0
	c			0.890	\$0
Project					
Life		Total Process Value of Discounted Possesite	Danadan I	loit Value	4.0
		Total Present Value of Discounted Benefits  (Sum of the values in Column (f) for all Ben			\$0
		(Sum of the values in Column (f) for all Ben	CIIIS SIIOW	ii iii table)	
Commen	ts:				

(1) Complete these columns if dollar value is being claimed for the benefit.

#### **Table 15. Total Water Supply Benefits**

(All benefits should be in 2009 dollars)

Project Title: CITY OF TRACY RECYCLED WATER PROJECT

Danie at Die ee	Total Discounted Water Supply Benefits (a)	Total Discounted Avoided Project Costs (b)	Other Discounted Water Supply Benefits (c)	Total Present Value of Discounted Benefits (d)
Project Phase		*****	•	(a) + (c) or (b) + (c)
Phase 1	n/a	\$4,169,170	\$0	\$4,169,170
Phase 2	n/a	\$599,991,002	\$0	\$599,991,002
Total - All Phases	n/a	\$604,160,172	\$0	\$604,160,172

Comments: This table summarizes the totals for each phase of the City's proposed Recycled Water project.

#### **WSID and DPWD Water Supply Enhancement Project**

#### TABLE 11A-ANNUAL COST OF PROJECT

Westside-San Joaquin Implementation Grant Application West Stanislaus Irrigation District & Del Puerto Water District Water Supply Enhancement Project

Phase I-Element I-Pump Station 5a and Main Canal-Delta Mendota Canal Intertie Pipeline

Construction/ Implementation		Initial Costs	nase i-Elemen			Maintenance Co		i intertie Pipeline		ng Calculations
Implementation								Discounti	ng carculations	
Year									Discount	Discounted
2011   \$6,344,211   \$10,920   \$8,563,225   \$12,9493   \$15,197,878   0.890   \$13,392,611   2012   \$3,416,114   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.792   \$6,892,304   2014   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.792   \$6,892,304   2016   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.665   \$5,787,938   2017   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.665   \$5,787,938   2018   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.665   \$5,787,938   2019   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.672   \$8,471,199   2019   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.588   2020   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.588   2021   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.588   2022   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.588   2023   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.428   2024   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.442   2024   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.442   2024   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.442   2025   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.442   2026   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.442   2027   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.442   2027   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.442   2028   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.349   2027   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.349   2029   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.350   2029   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.350   2033   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.320   2034   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.242   204   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.242   205   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.242   207   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.242   208   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.242   209   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.242   2004   \$10,920   \$8,563,225   \$129,493   \$8,703,666   0.242   2005   \$	Vaar		A desir	Operation	Maintananaa	Danlagament	Other	Total		
2012   \$3,416,114   \$10,920   \$8,563,253   \$129,493						Replacement	Other			
2013						-	-			
2014		\$3,416,114				-	-			
2015		-				-	-			
2016		-				-	-	. , ,		. , ,
2017		-				-	-			
2018		-				-	-			
2010		-				-	-			
2020		-				-	-			
2021		-				-	-			
2022         -         \$10,920         \$8,563,253         \$129,493         -         \$8,703,666         0.449         \$4,082,020           2024         -         \$10,920         \$8,563,253         \$129,493         \$273,111         \$8,705,666         0.442         \$3,447,021           2025         -         \$10,920         \$8,563,253         \$129,493         \$250,000         \$8,703,666         0.341         \$3,429,245           2026         -         \$10,920         \$8,563,253         \$129,493         \$250,000         \$8,703,666         0.350         \$3,429,245           2028         -         \$10,920         \$8,563,253         \$129,493         \$8,703,666         0.351         \$3,046,283           2030         -         \$10,920         \$8,563,253         \$129,493         \$8,703,666         0.312         \$2,871,544           2031         -         \$10,920         \$8,563,253         \$129,493         \$8,703,666         0.224         \$2,558,878           2032         -         \$10,920         \$8,563,253         \$129,493         \$8,703,666         0.227         \$2,280,361           2033         -         \$10,920         \$8,563,253         \$129,493         \$8,703,666         0.227         \$2,149,806<		-				-	-			
2023		-				\$193,722	-			
2024		-				-	-			
2025         \$10,920         \$8,563,253         \$129,493         \$8,703,666         0.394         \$3,429,245           2027         \$10,920         \$8,563,253         \$129,493         \$250,000         \$8,703,666         0.350         \$3,046,283           2028         \$10,920         \$8,563,253         \$129,493         \$500,000         \$8,703,666         0.350         \$3,046,283           2030         \$10,920         \$8,563,253         \$129,493         \$500,000         \$9,203,666         0.312         \$2,821,154           2031         \$10,920         \$8,563,253         \$129,493         \$500,000         \$9,739,388         0.278         \$2,707,550           2032         \$10,920         \$8,563,253         \$129,493         \$1,035,722         \$9,739,388         0.278         \$2,258,361           2033         \$10,920         \$8,563,253         \$129,493         \$8,703,666         0.247         \$2,149,806           2034         \$10,920         \$8,563,253         \$129,493         \$1,873,888         0.233         \$2,149,806           2035         \$10,920         \$8,563,253         \$129,493         \$3,8703,666         0.220         \$1,914,807           2036         \$10,920         \$8,563,253         \$129,493 <t< td=""><td></td><td>-</td><td>. ,</td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td></td></t<>		-	. ,			-	-			
2026		-				\$273,111	-			
2027		-				-	-			
2028		-				\$250,000	-			
2029		-			. ,	-	-	. , ,		
2030		-				-	-			
2031		-				\$500,000	-			
2032		-	. ,			-	-	\$8,703,666		
2033	2031	-	\$10,920	\$8,563,253	\$129,493	\$1,035,722	-	\$9,739,388	0.278	\$2,707,550
2034	2032	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.262	\$2,280,361
2035	2033	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.247	\$2,149,806
2036	2034	-	\$10,920	\$8,563,253	\$129,493	\$2,584,222	-	\$11,287,888	0.233	\$2,630,078
2037	2035	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.220	\$1,914,807
2038	2036	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.207	\$1,801,659
2039	2037	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.196	\$1,705,919
2040	2038	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.185	\$1,610,178
2041	2039	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.174	\$1,514,438
2041	2040	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.164	\$1,427,401
2043         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.138         \$1,201,106           2044         -         \$10,920         \$8,563,253         \$129,493         \$946,222         -         \$9,649,888         0.130         \$1,254,485           2045         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.116         \$1,009,625           2046         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.116         \$1,009,625           2047         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$948,700           2048         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$896,478           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737 <td>2041</td> <td>-</td> <td>\$10,920</td> <td>\$8,563,253</td> <td>\$129,493</td> <td>\$1,285,722</td> <td>-</td> <td>\$9,989,388</td> <td>0.155</td> <td></td>	2041	-	\$10,920	\$8,563,253	\$129,493	\$1,285,722	-	\$9,989,388	0.155	
2044         -         \$10,920         \$8,563,253         \$129,493         \$946,222         -         \$6,649,888         0.130         \$1,254,485           2045         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.123         \$1,070,551           2046         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.116         \$1,090,625           2047         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.109         \$948,700           2048         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$896,478           2049         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701	2042	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.146	\$1,270,735
2045         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.123         \$1,070,551           2046         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.116         \$1,009,625           2047         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.109         \$948,700           2048         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$896,478           2049         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701	2043	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.138	\$1,201,106
2046         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.116         \$1,009,625           2047         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.109         \$948,700           2048         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$896,478           2049         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$9,739,388         0.087         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701           2053         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.077         \$670,182	2044	-	\$10,920	\$8,563,253	\$129,493	\$946,222	-	\$9,649,888	0.130	\$1,254,485
2047         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.109         \$948,700           2048         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$896,478           2049         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$9,739,388         0.087         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701           2053         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.077         \$670,182           2054         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553	2045	-	\$10,920	\$8,563,253	\$129,493	-	-	\$8,703,666	0.123	\$1,070,551
2048         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$896,478           2049         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$9,739,388         0.087         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701           2053         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.077         \$670,182           2054         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553           2055         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553	2046	-				-	-			
2048         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.103         \$896,478           2049         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$9,739,388         0.087         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701           2053         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.077         \$670,182           2054         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.077         \$670,182           2055         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553	2047	-	\$10,920	\$8,563,253	\$129,493	_	-	\$8,703,666	0.109	\$948,700
2049         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.097         \$844,256           2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         -         \$9,739,388         0.087         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701           2053         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701           2054         -         \$10,920         \$8,563,253         \$129,493         -         -         \$11,287,888         0.077         \$670,182           2055         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553           2056         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.061         \$530,924	2048	-	\$10,920		\$129,493	-	-	\$8,703,666	0.103	\$896,478
2050         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.092         \$800,737           2051         -         \$10,920         \$8,563,253         \$129,493         -         \$9,739,388         0.087         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         \$8,703,666         0.082         \$713,701           2053         -         \$10,920         \$8,563,253         \$129,493         -         \$8,703,666         0.077         \$670,182           2054         -         \$10,920         \$8,563,253         \$129,493         -         \$11,287,888         0.073         \$824,016           2055         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553           2056         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,897,388         0.065         \$578,330           2057         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.061         \$530,924           2058         -         \$10,920	2049	_				_	-		0.097	
2051         -         \$10,920         \$8,563,253         \$129,493         \$1,035,722         -         \$9,739,388         0.087         \$847,327           2052         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.082         \$713,701           2053         -         \$10,920         \$8,563,253         \$129,493         -         \$8,703,666         0.077         \$670,182           2054         -         \$10,920         \$8,563,253         \$129,493         -         \$11,287,888         0.073         \$824,016           2055         -         \$10,920         \$8,563,253         \$129,493         -         \$8,703,666         0.069         \$600,553           2056         -         \$10,920         \$8,563,253         \$129,493         -         \$8,897,388         0.065         \$578,330           2057         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.061         \$530,924           2058         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.055         \$504,813           2059         -         \$10,920	2050	-				_	-			
2052       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.082       \$713,701         2053       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.077       \$670,182         2054       -       \$10,920       \$8,563,253       \$129,493       \$2,584,222       -       \$11,287,888       0.073       \$824,016         2055       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.069       \$600,553         2056       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.065       \$578,330         2057       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.061       \$530,924         2058       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.058       \$504,813         2059       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.055       \$506,202         2060       -       \$10,920       \$8,563,253       \$129,493       -       -		-				\$1,035,722	-		0.087	
2053       -       \$10,920       \$8,563,253       \$129,493       -       -       \$8,703,666       0.077       \$670,182         2054       -       \$10,920       \$8,563,253       \$129,493       -       \$11,287,888       0.073       \$824,016         2055       -       \$10,920       \$8,563,253       \$129,493       -       \$8,703,666       0.069       \$600,553         2056       -       \$10,920       \$8,563,253       \$129,493       -       \$8,897,388       0.065       \$578,330         2057       -       \$10,920       \$8,563,253       \$129,493       -       \$8,703,666       0.061       \$530,924         2058       -       \$10,920       \$8,563,253       \$129,493       -       \$8,703,666       0.058       \$504,813         2059       -       \$10,920       \$8,563,253       \$129,493       -       \$9,203,666       0.055       \$506,202         2060       -       \$10,920       \$8,563,253       \$129,493       -       \$8,703,666       0.052       \$452,591         2061       -       \$10,920       \$8,563,253       \$129,493       -       \$8,703,666       0.049       \$426,480		_				_	-			
2054         -         \$10,920         \$8,563,253         \$129,493         \$2,584,222         -         \$11,287,888         0.073         \$824,016           2055         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553           2056         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,897,388         0.065         \$578,330           2057         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.061         \$530,924           2058         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.058         \$504,813           2059         -         \$10,920         \$8,563,253         \$129,493         -         -         \$9,203,666         0.055         \$506,202           2060         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.052         \$452,591           2061         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.049         \$426,480 </td <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>_</td> <td>-</td> <td></td> <td></td> <td></td>		-				_	-			
2055         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.069         \$600,553           2056         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,897,388         0.065         \$578,330           2057         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.061         \$530,924           2058         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.058         \$504,813           2059         -         \$10,920         \$8,563,253         \$129,493         -         -         \$9,203,666         0.055         \$506,202           2060         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.052         \$452,591           2061         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.052         \$452,591           2061         -         \$10,920         \$8,563,253         \$129,493         -         -         \$8,703,666         0.049         \$426,480	2054	-				\$2,584,222	-		0.073	
2056     -     \$10,920     \$8,563,253     \$129,493     \$193,722     -     \$8,897,388     0.065     \$578,330       2057     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.061     \$530,924       2058     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.058     \$504,813       2059     -     \$10,920     \$8,563,253     \$129,493     -     \$9,203,666     0.055     \$506,202       2060     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.052     \$452,591       2061     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.049     \$426,480	2055	-				_	-		0.069	
2057     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.061     \$530,924       2058     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.058     \$504,813       2059     -     \$10,920     \$8,563,253     \$129,493     \$500,000     -     \$9,203,666     0.055     \$506,202       2060     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.052     \$452,591       2061     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.049     \$426,480		-				\$193,722	-			
2058     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.058     \$504,813       2059     -     \$10,920     \$8,563,253     \$129,493     \$500,000     -     \$9,203,666     0.055     \$506,202       2060     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.052     \$452,591       2061     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.049     \$426,480		_				_	_			
2059     -     \$10,920     \$8,563,253     \$129,493     \$500,000     -     \$9,203,666     0.055     \$506,202       2060     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.052     \$452,591       2061     -     \$10,920     \$8,563,253     \$129,493     -     -     \$8,703,666     0.049     \$426,480		_				_	_			
2060   - \$10,920   \$8,563,253   \$129,493   -   \$8,703,666   0.052   \$452,591		_				\$500,000	_			
2061 - \$10,920 \$8,563,253 \$129,493 \$8,703,666 0.049 \$426,480		-				_	-			
		-				_	-			
		_				_	-	. ,		

Total Present Value of Discounted Costs \$139,964,333

<sup>1.</sup> Cost discounted to reflect a present value in 2009 Dollars

#### TABLE 11B-ANNUAL COST OF PROJECT

### Westside-San Joaquin Implementation Grant Application West Stanislaus Irrigation District & Del Puerto Water District Water Supply Enhancement Project

Phase I-Element II-WSID Fish Screen Intake Final Design, Environmental Compliance and Permitting

	Initial Costs	Liement II W			Maintenance Co		ipilance and Fern		ng Calculations
	Construction/								
	Implementation							Discount	Discounted
Year	Costs	Admin	Operation	Maintenance	Replacement	Other	Total	Factor <sub>1</sub>	Cost
2011	\$1,100,000	\$20,000	Operation	Maintenance	Replacement	Other	\$1,120,000	0.890	\$996,800
2011	\$1,100,000	\$20,000	-	_	_	_	\$1,120,000	0.840	\$940,800
2012	\$1,100,000	\$20,000	-	-	-	-	\$1,120,000	0.792	
2013	_	-	-	-	-	-	\$0	0.792	\$0 \$0
2014	_	-	-	-	-	-	\$0	0.747	\$0 \$0
2015	_	-	-	-	-	-	\$0	0.765	\$0
2017	_	-	-	-	-	-	\$0	0.603	\$0 \$0
2017	_	-	-	-	-	-	\$0	0.627	\$0 \$0
2019	_	-	-	-	-	-	\$0	0.558	
	_	-	-	-	-	-		I I	\$0 \$0
2020	_	-	-	-	-	-	\$0	0.527	\$0 \$0
2021	-	-	-	-	-	-	\$0	0.497	\$0
2022	-	-	-	-	-	-	\$0	0.469	\$0
2023	-	-	-	-	-	-	\$0	0.442	\$0
2024	-	-	-	-	-	-	\$0	0.417	\$0
2025	-	-	-	-	-	-	\$0	0.394	\$0
2026	-	-	-	-	-	-	\$0	0.371	\$0
2027	-	-	-	-	-	-	\$0	0.350	\$0
2028	-	-	-	-	-	-	\$0	0.331	\$0
2029	-	-	-	-	-	-	\$0	0.312	\$0
2030	-	-	-	-	-	-	\$0	0.294	\$0
2031	-	-	-	-	-	-	\$0	0.278	\$0
2032	-	-	-	-	-	-	\$0	0.262	\$0
2033	-	-	-	-	-	-	\$0	0.247	\$0
2034	-	-	-	-	-	-	\$0	0.233	\$0
2035	-	-	-	-	-	-	\$0	0.220	\$0
2036	-	-	-	-	-	-	\$0	0.207	\$0
2037	-	-	-	-	-	-	\$0	0.196	\$0
2038	-	-	-	-	-	-	\$0	0.185	\$0
2039	-	-	-	-	-	-	\$0	0.174	\$0
2040	-	-	-	-	-	-	\$0	0.164	\$0
2041	-	-	-	-	-	-	\$0	0.155	\$0
2042	-	-	-	-	-	-	\$0	0.146	\$0
2043	-	-	-	-	-	-	\$0	0.138	\$0
2044	-	-	-	-	-	-	\$0	0.130	\$0
2045	-	-	-	-	-	-	\$0	0.123	\$0
2046	-	-	-	-	-	-	\$0	0.116	\$0
2047	-	-	-	-	-	-	\$0	0.109	\$0
2048	-	-	-	-	-	-	\$0	0.103	\$0
2049	-	-	-	-	-	-	\$0	0.097	\$0
2050	-	-	-	-	-	-	\$0	0.092	\$0
2051	-	-	-	-	-	-	\$0	0.087	\$0
2052	-	-	-	-	-	-	\$0	0.082	\$0
2053	-	-	-	-	-	-	\$0	0.077	\$0
2054	-	-	-	-	-	-	\$0	0.073	\$0
2055	-	-	-	-	-	-	\$0	0.069	\$0
2056	-	-	-	-	-	-	\$0	0.065	\$0
2057	-	-	-	-	-	-	\$0	0.061	\$0
2058	-	-	-	-	-	-	\$0	0.058	\$0
2059	-	-	-	-	-	-	\$0	0.055	\$0
2060	-	-	-	-	-	-	\$0	0.052	\$0
2061	-	-	-	-	-	-	\$0	0.049	\$0
2062	-						\$0	0.046	\$0
				•		Total Duocon	t Value of Discou	nted Costs	\$1,937,600

**Total Present Value of Discounted Costs** \$1,937,600

<sup>1.</sup> Cost discounted to reflect a present value in 2009 Dollars

# TABLE 12-ANNUAL WATER SUPPLY BENEFITS Westside-San Joaquin Implementation Grant Application West Stanislaus Irrigation District & Del Puerto Water District Water Supply Enhancement Project Phase I-Element I-Pump Station 5a and Main Canal-Delta Mendota Canal Intertie Pipeline

	Phase I-Element I-Pump S	station 2a and	i Main Car	iai-Deita M	endota Canai	intertie Pi	enne		
a	b	c	d	e	f	g	h	i	j
		Measure of			Characa				
			1177-1 ·	3377.4	Change	TT to b		D: .	ъ.
		Benefit	Without	With	Resulting	Unit \$	Annual \$	Discount	Discounted
Year	Type of Benefit	(Units)	Project	Project <sub>1,2</sub>	from Project	Value <sub>3</sub>	Value	Factor	Benefit <sub>4</sub>
2011	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	-	-	\$200	-	0.890	-
2011	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	-	-					\$1,308,828
2012	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	-	-	\$200	-	0.840	_
2012	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	_	_					\$970,592
	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet		57,000	57,000	\$200	\$11,400,000	0.792	\$9,028,800
2013	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	57,000	φ200	\$11,400,000	0,792	\$256,208
			23,033		57,000	#200	¢11 400 000	0.747	
2014	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.747	\$8,515,800
<b></b>	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$241,651
2015	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.705	\$8,037,000
2010	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$228,064
2016	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.665	\$7,581,000
2010	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$215,124
2017	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.627	\$7,147,800
2017	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$202,832
	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	_	57,000	57,000	\$200	\$11,400,000	0.592	\$6,748,800
2018	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	27,000	Ψ200	411,100,000	0,072	\$191,509
	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	20,000	57,000	57,000	\$200	\$11,400,000	0.558	\$6,361,200
2019			25.025		37,000	\$200	φ11,400,000	0,558	
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	## coc	4500	e11 (00 000	0.535	\$180,510
2020	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.527	\$6,007,800
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$170,482
2021	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.497	\$5,665,800
2021	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$160,777
2022	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.469	\$5,346,600
2022	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$151,719
2022	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	_	57,000	57,000	\$200	\$11,400,000	0.442	\$5,038,800
2023	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	,	,	4,		\$142,985
<del> </del>	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	20,000	57,000	57,000	\$200	\$11,400,000	0.417	\$4,753,800
2024		1	25 925	25,835	57,000	\$200	\$11,400,000	0,417	
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835		57.000	+200	*** 100 000	0.204	\$134,898
2025	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet		57,000	57,000	\$200	\$11,400,000	0.394	\$4,491,600
<b></b>	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$127,457
2026	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.371	\$4,229,400
2020	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$120,017
2027	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.350	\$3,990,000
2021	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$113,223
2020	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.331	\$3,773,400
2028	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	,				\$107,077
	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet		57,000	57,000	\$200	\$11,400,000	0.312	\$3,556,800
2029	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	57,000	φ200	\$11,400,000	0,512	\$100,931
<del> </del>			23,633		57,000	¢200	\$11,400,000	0.204	
2030	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	25.025	57,000	37,000	\$200	\$11,400,000	0.294	\$3,351,600
<b>——</b>	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$95,108
2031	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.278	\$3,169,200
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$89,932
2032	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.262	\$2,986,800
2032	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$84,756
2022	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.247	\$2,815,800
2033	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$79,903
	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.233	\$2,656,200
2034	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	27,000	4200	+11,100,000	0,200	\$75,374
<del></del>	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	20,000		57,000	\$200	\$11,400,000	0.220	\$2,508,000
2035			25 025	57,000	37,000	\$200	φ11,400,000	0.220	
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	## co.	+800	e11 (00 000	0.207	\$71,169
2036	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.207	\$2,359,800
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$66,964
2037	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.196	\$2,234,400
2001	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$63,405
2038	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.185	\$2,109,000
2036	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$59,847
2020	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.174	\$1,983,600
2039	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	,,	, <b>-</b>	. ,		\$56,288
	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet		57,000	57,000	\$200	\$11,400,000	0.164	\$1,869,600
2040	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25 925	25,835	27,000	Ψ200	Ψ11,400,000	0.104	
			25,835		57.000	6000	¢11 400 000	0.155	\$53,053
2041	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	25.025	57,000	57,000	\$200	\$11,400,000	0.155	\$1,767,000
<del></del>	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$50,142
2042	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.146	\$1,664,400
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835		I		1	\$47,230

## TABLE 12-ANNUAL WATER SUPPLY BENEFITS (CONTINUED)

a	b	c	d	e	f	g	h	i	j
		Measure of			Change				
		Benefit	Without	With	Resulting	Unit \$	Annual \$	Discount	Discounted
Year	Type of Benefit	(Units)	Project	Project <sub>1,2</sub>	from Project	Value,	Value	Factor	Benefit <sub>4</sub>
2043	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.138	\$1,573,200
2043	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$44,642
2044	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.130	\$1,482,000
2044	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$42,054
2045	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.123	\$1,402,200
2043	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$39,790
2046	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.116	\$1,322,400
2040	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$37,525
2047	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.109	\$1,242,600
2047	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$35,261
2048	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.103	\$1,174,200
2040	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$33,320
2049	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.097	\$1,105,800
2049	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$31,379
2050	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.092	\$1,048,800
2050	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$29,762
2051	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.087	\$991,800
2051	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$28,144
2052	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.082	\$934,800
2052	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$26,527
2053	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.077	\$877,800
2000	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$24,909
2054	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.073	\$832,200
2001	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$23,615
2055	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.069	\$786,600
2000	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$22,321
2056	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.065	\$741,000
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$21,027
2057	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.061	\$695,400
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$19,733
2058	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.058	\$661,200
2000	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$18,763
2059	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.055	\$627,000
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	_				\$17,792
2060	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.052	\$592,800
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$16,822
2061	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.049	\$558,600
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835	_				\$15,851
2062	Storage Conveyance for WSID and DPWD Transfer	Acre-Feet	-	57,000	57,000	\$200	\$11,400,000	0.046	\$524,400
	Avoided Costs for Pump Station 5 and 6 Upgrades <sub>5</sub>	Acre-Feet	25,835	25,835					\$14,881

#### Total Present Value of Discounted Benefits Based on Unit Value

\$157,486,776

- 1. Estimated Annual Delivery Capacity for Storage in Delta Mendota Canal system based on the Main Canal-Delta Mendota Canal Intertie Project Concept Development report, dated August 2010 and prepared by AECOM.
- Estimated Annual Delivery Capacity conveyed through the West Stanislaus Irrigation District system into the Delta Mendota Canal system for Del Puerto Water District based on Figure 3-5
  and Table 4-15 in the Del Puerto Water District Recycled Water Feasibility Study, dated October 2010 and prepared by RMC
- 3. Estimated Unit Value for water based on values presented in Table 2-1, Historic Water Transfer Data, in the Del Puerto Water District Recycled Water Feasibility Study (Draft), dated October 2010 and prepared by RMC
- 4. Cost discounted to reflect a present value in 2009 Dollars, Includes water supply benefit for avoided project costs which reflect the discounted valuations shown on Table 13 and thus not shown in the discounted valuation calculations above in columns f through i.
- 5. Consists of the water supply benefit for avoided project costs required to repair, operate and maintain the pumping facilities at Pump Stations 5 and 6 to provide for those portions of the water supply delivered within the existing WSID Main Canal and associated Laterals 5 and 6 system.

#### TABLE 13-ANNUAL COSTS OF AVOIDED PROJECTS<sub>1</sub>

#### Westside-San Joaquin Implementation Grant Application

West Stanislaus Irrigation District & Del Puerto Water District

Water Supply Enhancement Project

Phase I-Element I-Pump Station 5a and Main Canal-Delta Mendota Canal Intertie Pipeline

-		1 Hase 1	- Element 1-1 ump t	tation sa and man	Canal-Delta Mene	iota Canai intertie i	ipeinie	
	a	b	С	d	e	f	g	h
			Existing Pump Statio	n 5 and 6, Without	Any Delivery			
		Capacity to DMC Included						
				Avoided	Total Cost Avoided			
		Avoided Capital	Avoided	Operations and	for Individual	Total Cost Avoided		
	Year	Cost	Replacement Cost	Maintenance Cost	Alternatives	for All Alternatives	Discount Factor	Discounted Cost <sub>2</sub>
1	2011	\$1,470,594	\$0	\$0	\$1,470,594	\$1,470,594	0.89	\$1,308,828
	2012	\$1,155,466	\$0	\$0	\$1,155,466	\$1,155,466	0.84	\$970,592
	2013	-	\$63,974	\$259,522	\$323,495	\$323,495	0.792	\$256,208
	2014	_	\$63,974	\$259,522	\$323,495	\$323,495	0.747	\$241,651
	2015	_	\$63,974	\$259,522	\$323,495	\$323,495	0.705	\$228,064
	2016	_	\$63,974	\$259,522	\$323,495	\$323,495	0.665	\$215,124
	2017	_	\$63,974	\$259,522	\$323,495	\$323,495	0.627	\$202,832
	2018	_	\$63,974	\$259,522	\$323,495	\$323,495	0.592	\$191,509
	2019	_	\$63,974	\$259,522	\$323,495	\$323,495	0.558	\$180,510
	2020	_	\$63,974	\$259,522	\$323,495	\$323,495	0.527	\$170,482
	2021	-	\$63,974	\$259,522	\$323,495	\$323,495	0.497	\$160,777
	2022	-	\$63,974	\$259,522	\$323,495	\$323,495	0.469	\$151,719
	2023	-	\$63,974	\$259,522	\$323,495	\$323,495	0.442	\$142,985
	2024	-	\$63,974	\$259,522	\$323,495	\$323,495	0.417	\$134,898
	2025	-	\$63,974	\$259,522	\$323,495	\$323,495	0.394	\$127,457
	2026	-	\$63,974	\$259,522	\$323,495	\$323,495	0.371	\$120,017
	2027	-	\$63,974	\$259,522	\$323,495	\$323,495	0.35	\$113,223
	2028	-	\$63,974	\$259,522	\$323,495	\$323,495	0.331	\$107,077
	2029	-	\$63,974	\$259,522	\$323,495	\$323,495	0.312	\$100,931
	2030	-	\$63,974	\$259,522	\$323,495	\$323,495	0.294	\$95,108
	2031	-	\$63,974	\$259,522	\$323,495	\$323,495	0.278	\$89,932
	2032	-	\$63,974	\$259,522	\$323,495	\$323,495	0.262	\$84,756
	2033	-	\$63,974	\$259,522	\$323,495	\$323,495	0.247	\$79,903
	2034	-	\$63,974	\$259,522	\$323,495	\$323,495	0.233	\$75,374
	2035	-	\$63,974	\$259,522	\$323,495	\$323,495	0.22	\$71,169
	2036	-	\$63,974	\$259,522	\$323,495	\$323,495	0.207	\$66,964
	2037	-	\$63,974	\$259,522	\$323,495	\$323,495	0.196	\$63,405
	2038	-	\$63,974	\$259,522	\$323,495	\$323,495	0.185	\$59,847
	2039	-	\$63,974	\$259,522	\$323,495	\$323,495	0.174	\$56,288
	2040	-	\$63,974	\$259,522	\$323,495	\$323,495	0.164	\$53,053
	2041	-	\$63,974	\$259,522	\$323,495	\$323,495	0.155	\$50,142
	2042	-	\$63,974	\$259,522	\$323,495	\$323,495	0.146	\$47,230
	2043	-	\$63,974	\$259,522	\$323,495	\$323,495	0.138	\$44,642
	2044	-	\$63,974	\$259,522	\$323,495	\$323,495	0.13	\$42,054
	2045	-	\$63,974	\$259,522	\$323,495	\$323,495	0.123	\$39,790
	2046	-	\$63,974	\$259,522	\$323,495	\$323,495	0.116	\$37,525
	2047	-	\$63,974	\$259,522	\$323,495	\$323,495	0.109	\$35,261
	2048	-	\$63,974	\$259,522	\$323,495	\$323,495	0.103	\$33,320
	2049	-	\$63,974	\$259,522	\$323,495	\$323,495	0.097	\$31,379
	2050	-	\$63,974	\$259,522	\$323,495	\$323,495	0.092	\$29,762
	2051	-	\$63,974	\$259,522	\$323,495	\$323,495	0.087	\$28,144
	2052	-	\$63,974	\$259,522	\$323,495	\$323,495	0.082	\$26,527
	2053	-	\$63,974	\$259,522	\$323,495	\$323,495	0.077	\$24,909
	2054	-	\$63,974	\$259,522	\$323,495	\$323,495	0.073	\$23,615
	2055	-	\$63,974	\$259,522	\$323,495	\$323,495	0.069	\$22,321
	2056	-	\$63,974	\$259,522	\$323,495	\$323,495	0.065	\$21,027
	2057	-	\$63,974	\$259,522	\$323,495	\$323,495	0.061	\$19,733
	2058	-	\$63,974	\$259,522	\$323,495	\$323,495	0.058	\$18,763
	2059	-	\$63,974	\$259,522	\$323,495	\$323,495	0.055	\$17,792
	2060	-	\$63,974	\$259,522	\$323,495	\$323,495	0.052	\$16,822
	2061	-	\$63,974	\$259,522	\$323,495	\$323,495	0.049	\$15,851
	2062	-	\$63,974	\$259,522	\$323,495	\$323,495	0.046	\$14,881

Total Present Value of Discounted Costs

\$6,562,176 100%

\$6,562,176

% Avoided Cost Claimed by Project Total Present Value of Discounted Avoided Project Costs Claimed by Alternative Project

<sup>1.</sup> Consists of the avoided project costs required to repair, operate and maintain the pumping facilities at Pump Stations 5 and 6 to provide for those portions of the water supply delivered within the existing WSID Main Canal and associated Laterals 5 and 6 system only.

<sup>2.</sup> Cost discounted to reflect a present value in 2009 Dollars.

#### TABLE 15-TOTAL WATER SUPPLY BENEFITS

(All Benefits Shown in 2009 Dollars)

#### Westside-San Joaquin Implementation Grant Application West Stanislaus Irrigation District & Del Puerto Water District

Water Supply Enhancement Project

#### Phase I-Element I-Pump Station 5a and Main Canal-Delta Mendota Canal Intertie Pipeline

	Total Discounted	Other Discounted Water	Total Present Value of
Total Discounted Water Supply Benefits	Avoided Project Costs <sub>1</sub>	Supply Benefits	Discounted Benefits
\$157,486,776	-	-	\$157,486,776

The Total Discounted Avoided Project Costs from Table 13 are included in the Total Present Value of Discounted Benefits as shown on Table 12. A summary of Total Discounted Water Supply Benefits is provided above.